Sr.No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	Link to website of the Journal	Link to article/paper/abstract of the article	Is it listed in UGC Care list/Scopus/Web of Science/other, mention
1	Study of Springback in sheet metal bending- FEA and Neural Network approach"	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	published in Elsevier Journal, "Procedia Material Science",	2014		https://doi.org/10.1016/j.mspro.2014.07.100	(UGC listed Journal)
2	Direct Torque Control of Induction Motor using fuzzy logic	K.P Gawade	Electrical Engineering	IJIREEICE	2016			Other
3	Performance improvement of PCC and PTC methods of model-based predictive direct control strategies for electrical drives with multilevel inverter	Dr Sanjay A. Deokar	Electrical Engineering	Journal of Electrical Engineering and Electronic Technology	2017	10.4172/2325-9833-C1-009.	https://www.scitechnol.com/proceedings/performance-improvement-of-pcc-and-ptc-methods-of-modelbased-predictive-direct-control-strategies-for-electrical-drives--3740.html	J-Gate & Index Copernicus)

3.2.1 Number of papers published per teacher in the Journals notified on UGC website during the last five years (5)

Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number

4	Performance Evaluation of Dynamic Voltage Restorer Based on Transformer-based Z Source Inverter	Dr Sanjay A. Deokar	Electrical Engineering	International Journal of Power Electronics and Drive System (IJPEDS)	2017	http://doi.org/10.11591/ijpeds.v8.i3.pp1101-1108	http://doi.org/10.11591/ijpeds.v8.i3.pp1101-1108	**(Scopus Indexed),**
5	Switching Losses Minimization by Using Direct Torque Control of Induction Motor	Dr Sanjay A. Deokar	Electrical Engineering	Journal of Electrical Systems and Information Technology	2017		https://doi.org/10.1016/j.jesit.2016.08.007	**Science Direct , Elsevier Pub)**
6	Digital Image Watermarking Using DCT for Image Authentication	Sarika Pawar	Computer Engineering	IJSRD	2017	https://www.ijsrd.com	https://ijariie.com/AdminUploadPdf/EMOTION_DETECTION_USNING_MACHINE_LEARINING_ijariie16135.pdf	**Other**
7	A Profit Maximization Scheme in Cloud Computing with QoS	Padalkar Supriya	Computer Engineering	IRJET	2017	www.irjet.net	https://www.academia.edu/33600778/A_Profit_Maximization_Scheme_in_Cloud_Computing_with_QoS	**Other**
8	Computer vision Suystem for Eye Gaze Tracking	Prof. P. P. Sorate	Computer Engineering	International Journal of Modern Computer Science (IJMCS)	2017		https://www.irjet.net/archives/V4/i6/IRJET-V4I6507.pdf	**Other**
9	Survey Paper on Eye Gaze Tracking Methods and Techniques	Prof. P. P. Sorate	Computer Engineering	International Research Journal of Engineering and Technology (IRJET)	2017		https://www.irjet.net/archives/V4/i6/IRJET-V4I6507.pdf	**Other**

10	A Survey on Controlling Traffic with Subterfuge in Smart Gird to Minimize Message Delay under Jamming	Prof.P. V.Bhagat	Computer Engineering	International Journal of Innovative Research in Computer and Communication Engineering	2017		https://www.semantic scholar.org/paper/A-Survey-on-Controlling-Traffic-with-Subterfuge-in-Bhagat-Bhandari/8fe999e36de f032fd0c2a9a8214787 6a1fdc89ee	**Other**
11	Fault Current Limiter by using Series Transformer for Distribution System based on SCR	Prof.S S. Phadtare	Electrical Engineering	International Journal for Scientific Research & Development	2017		https://ijsrd.com/Articl e.php?manuscript=IJSR DV6I11166	**Other**
12	Switching losses minimization and performance improvement of PCC and PTC methods of model predictive direct torque control drives with voltage source inverter", ,	Dr Sanjay A. Deokar	Electrical Engineering	Journal of Emerging Technologies and innovative Research(JETIR),	2018	DOI Number:JETIRA0062 60.	https://www.jetir.org/ papers/JETIRA006260. pdf	(UGC Listed),
13	Switching Losses Minimization and performance improvement of PCC and PTC methods of model predictive Direct Torque Control drives with 15-level inverter.",	Dr Sanjay A. Deokar	Electrical Engineering	Journal of Electrical Systems and Information Technology,	2018	org/10.1016/j.jesit.2 017.01.009.	https://doi.org/10.101 6/j.jesit.2017.01.009	**Science Direct , Elsevier Pub)**

14	Performance Improvement of PCC and PTC Methods of Model Based Predictive Direct Control Strategies for Electrical Drives using PMSM with Multilevel Inverter	Dr Sanjay A. Deokar	Electrical Engineering	Global Journal of Researches in Engineering: FElectrical and Electronics Engineering	2018		https://www.scitechnol.com/proceedings/performance-improvement-of-pcc-and-ptc-methods-of-modelbased-predictive-direct-control-strategies-for-electrical-drives--3740.html	**Other**
15	Study of springback in U shape bending with holes in component",	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	Industrial Engineering Journal,	2018		http://dx.doi.org/10.26488/IEJ.11.9.1142	**Other**
16	Springback in Sheet Metal Bending- A review	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	published in IOSR Journal of Mechanical and Civil Engineering,	2018		https://www.iosrjournals.org/iosr-jmce/papers/sicete(mech)-volume4/41.pdf	**Other**
17	strorage outsourcing with secure accessibilityin mobile cloud computing	Bhapkar Ashwini	Computer Engineering	IJIRCCE	2018			**Other**
18	Comparative Study of routing techniques in Wireless Sensor Network	Dhaigude Tanaji Anandrao and Dr. Latha Parthiban	Computer Engineering	International Journal of Engineering & Technology	2018		https://www.sciencepubco.com/index.php/ijet/article/view/19703	**Other**

19	Performance Scaling of Wireless Sensor Network by using enhanced OMRA Routing Algorithm	Dhaigude Tanaji Anandrao, Dr. Latha Parthiban and Mr. Kokare A. V.	Computer Engineering	Computing. Communication and Signal Processing. Advances in Intelligent Systems and Computing	2018		https://www.researchgate.net/publication/327632536_Performance_Scaling_of_Wireless_Sensor_Network_by_Using_Enhanced_OMRA_Routing_Algorithm_Proceedings_of_ICCASP_2018	**Other**
20	Mechanism For Energy Consumption Routing Protocols For WSN Using RSES	Dhaigude Tanaji Anandrao and Dr. Latha Parthiban	Computer Engineering	International Journal of Mechanical Engineering & Technology	2018		https://www.researchgate.net/publication/327529209_Mechanism_for_energy_consumption_routing_protocols_for_WSN_using_RSES	**Other**
21	PERFORMANCE IMPROVEMENT OF DSR Protocol By Controlling Overhead In MANET	Dhaigude Tanaji Anandrao and Dr. Latha Parthiban	Computer Engineering	International Journal of Mechanical Engineering & Technology	2018		https://iaeme.com/MasterAdmin/Journal_uploads/IJMET/VOLUME_9_ISSUE_8/IJMET_09_08_073.pdf	**Other**
22	Use of OMRA algorithm for energy efficient routing	Dhaigude Tanaji Anandrao and Dr. Latha Parthiban	Computer Engineering	International Journal of Pure and Applied Mathematics	2018		https://www.researchgate.net/publication/326174089_Use_of_omra_algorithm_for_energy_efficient_routing	**Other**
23	Uses of Spent Wash to Improve soil Properties for Road Construction	C.V. Naik, A.S.Parlikar, A.B. Revade	Civil Engineering	International Journal of Civil Engineering & Technology	2018		https://iaeme.com/MasterAdmin/Journal_uploads/IJCIET/VOLUME_9_ISSUE_9/IJCIET_09_09_116.pdf	**SCOPUS**

24	Seven Quality Tools A Review	Akshay Jaware, Komal Bhandare, Gaura Sonavane, Shraddha Bhagat	Mechanical Enginering	IRJET	2018		https://www.irjet.net/archives/V5/i5/IRJET-V5I531.pdf	
25	Reduction of Machining Rejection of Shift Fork By Using Seven Quality Tools	Akshay Jaware, Komal Bhandare, Gaura Sonavane, Shraddha Bhagat	Mechanical Enginering	IRJET	2018		https://www.irjet.net/archives/V5/i4/IRJET-V5I4962.pdf	
26	DWT-Differential Analysis Optimization technique Used in protection of Microgrid	Dr Sanjay A. Deokar	Electrical Engineering	ADBU Journal of Electrical and Electronics Engineering(AJEEE)	2019		https://www.neliti.com/publications/360817/dwt-differential-analysis-optimization-technique-used-in-the-protection-of-micro	**Other**
27	Differential Algorithm Based Intelligent Protection Scheme for Microgrid ",	Dr Sanjay A. Deokar	Electrical Engineering	International Journal of Innovative Technology and Exploring Engineering (IJITEE) ,	2019	10.35940/ijitee.13026.0789s319.	https://www.ijitee.org/wp-content/uploads/papers/v8i9S3/I30260789S319.pdf	**Other**
28	A Real Time Control and Monitoring of Grid Power Systems using Cloud computing ",	Dr Sanjay A. Deokar	Electrical Engineering	International Journal of Electrical and Computer Engineering (IJECE),	2019	10.11591/ijece.v9i2.	http://doi.org/10.11591/ijece.v9i2.pp941-949	**(Scopus indexed)**
29	An efficient Online Social Network Mental Disorder Detection Using Machine Learning Framework.	Wagh Mangal	Computer Engineering	IJRECE	2019			**Other**

	Title	Authors	Department	Journal	Year	ISSN	Link	
30	Emerent wireless sensor network with Enhanced-OMRA Routing Algorithm	Dhaigude Tanaji Anandrao and Dr. Latha Parthiban	Computer Engineering	International Journal of Civil Engineering & Technology	2019			**Other**
31	A survey on Energy Efficient Routing Protocols	Dhaigude Tanaji Anandrao and Dr. Latha Parthiban	Computer Engineering	International Journal of Pure and Applied Mathematics	2019		https://www.acadpubl.eu/jsi/2018-118-18/articles/18d/8.pdf	**Other**
32	Modeling and Simulation Capacity Analysis of MIMO Wireless Sensor Network	Mr. R. A. Veer, Dr L C Siddanna, Gowd, Mr. Dhaigude Tanaji Anandrao and Dr. Latha Parthiban	Computer Engineering	International Journal of Pure and Applied Mathematics	2019		https://www.journalimcms.org/special_issue/modeling-and-simulation-capacity-analysis-of-mimo-wireless-sensor-network/	**Other**
33	Design And Analysis of Single Phase Modified Quasi-Z-Source Cascaded Hybrid Three Level Invertor	A.V. Golande	Electrical Engineering	Computing. Communication and Signal Processing. Advances in Intelligent Systems and Computing	2019	ISSN: 2348-1269	https://www.irjet.net/archives/V6/i7/IRJET-V6I7122.pdf	**Other**
34	Hardware Implementation of Single Phase Modified Quasi-Z-Source Cascaded Hybrid Five Level Invertor	A.V. Golande	Electrical Engineering	International Research Journal of Research and Analytical Reviews (IJRAR)	2019			**Other**

35	Hybrid Electric Vehicle Fault Diagnosis and Detection Technique	Dr Sanjay A. Deokar	Electrical Engineering	International Journal of Engineering Research and Technology (IJERT)	2020	DOI : 10.17577/IJERTV	https://www.ijert.org/research/hybrid-electric-vehicle-fault-diagnosis-and-detection-technique-IJERTV10IS040003.pdf	**UGC indexed**
34	Improvement of Traditional Protection System in the Existing Hybrid Microgrid with Advanced Intelligent Method ",	Dr Sanjay A. Deokar	Electrical Engineering	International Journal on Data Science,	2020	10.18517/ijods.1.2.72-81.2020.	https://ijods.org/index.php/ds/article/view/15	**Other**
35	Relay Coordination and Optimization techniques using DWTDifferentiation Algorithms for Fault Detection in Micro grid",	Dr Sanjay A. Deokar	Electrical Engineering	AIMS Energy	2020	10.3934/energy.2020.4.563.	https://doi.org/10.3934/energy.2020.4.563	**,(UGC Indexed)**
36	Study of Effect of BHF on Springback-FEA Approach,	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	International Journal of Future Generation Communication and Networking	2020		http://shabdbooks.com/gallery/spl-312.pdf	**(Web of Science)**
37	Effect of sheet thickness and R/t ratio on Springback in sheet metal forming,	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	International Journal of Future Generation Communication and Networking	2020		http://shabdbooks.com/gallery/spl-313.pdf	**(Web of Science)**

38	Prediction of Springback in Sheet Metal Forming Using FEA and Neural Network,	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	Elixir International Journal.	2020		http://dx.doi.org/10.3390/applmech1020007	**Other**
39	Experimental Investigation on Development and Effect of Elevated Temperature on M-20 Geopolymer Concrete	Mr. Sanket P. Kulkarni , Miss. Smita M. Patil	Civil Engineering	IJARSCT	2020	XX.ABCDE/IJARST	https://ijarsct.co.in/Paper41.pdf	**Other**
40	AC/DC Hybrid Electric Power Generation System For More Electric Aircraft	Bhosale A.C.	Electrical Engineering	ICRIET-20	2020	http://dx.doi.org/10.1109/ICOECS50468.2020.9278460	https://www.researchgate.net/publication/347542526_Electric_Aircraft_by_Using_ACDC_Hybrid_Electric_Power_Generation_System	**Other**
41	Brain tumor detection and tissue classification using machine learning algorithm.	Bhapkar Ashwini	Computer Engineering	IJARIIE	2020		https://inpressco.com/brain-tumor-detection-and-tissue-classification-using-machine-learning-algorithm/	**Other**
42	Improved Performance of Direct Torque Control with PMSM compared to DTC with Induction Motor	Dr Sanjay A. Deokar	Electrical Engineering	International Turkish Journal of Computer and Mathematics Education,	2021	10.17762/turcomat.v12i10.5477.	https://doi.org/10.17762/turcomat.v12i10.5477	**(Scopus Indexed),**

43	Optimization techniques using DWT-differentiation algorithms for fault detection and relay coordination in a micro grid	Dr Sanjay A. Deokar	Electrical Engineering	Electrical Engineering, (Springer Journal,SCI)	2021	10.1007/s00202-020-01089-1.	https://link.springer.com/article/10.1007/s00202-020-01089-1	
44	Parameters Affecting Springback-A Review	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	*Design Engineering*	2021			**Scopus Journal**
45	Effect of Orientation on Springback for Component with Hole and without Hole	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	Journal of University of Shanghai for Science and Technology	2021		https://jusst.org/wp-content/uploads/2021/06/Effect-of-Orientation-on-Springback-for-Component-with-Hole-and-without-Hole.pdf	**Scopus Journal**
46	Springback in Sheet Metal Forming	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	Solid State Technology	2021		https://solidstatetechnology.us/index.php/JSST/article/view/10914	(**Scopus Journal**)
47	Synthesis & Characterization of Magnesium Zinc Ferrite Nanoparticals by Sol Gel Auto Combustion Methods	Kaiyyum C. Attar, Monika G. Jagatap	General Science	IJRASET	2021		http://dx.doi.org/10.22214/ijraset.2021.33434	**Other**

	Title	Authors	Department	Journal	Year		Link	Type
48	Effect of Light Intensity & Distance of The Light Source on the Output Voltage of Solar Cell	Dhananjay Bansode, Pachukant Holkar, Kaiyyum C. Attar, Mrunali Chavan	General Science	PENSEE	2021			**UGC**
49	Synthesis & Characterization of Nickel-Bismuth Aluminium Ferrite Nanoparticals by Sol Gel Auto Combustion Methods	Pachukant Holkar, Kaiyyum C. Attar, C.S. Vhawal	General Science	IJISET	2021		https://ijiset.com/vol8/v8s2/IJISET_V8_I02_25.pdf	**Other**
50	Modal Analysis of Carbon Fiber and Carbon Fiber- Rubber Composite Plates.	Mr. Ghadage M.M., Mr. Bhagwat V.B.	Mechanical Enginerin	Journal of Interdisciplinary Cycle Research	2021		https://drive.google.com/file/d/1vm6ooC98SufqSDTR6LGXTcSwvcYQ2CaR/view?usp=sharing	**UGC**
51	Use of Industrial by-product to Produce Eco Friendly Geopolymer Concrete	Miss. Smita M. Patil , Mr. Sanket P. Kulkarni , Mr. Chinmay V. Naik	Civil Engineering	IJIRSET	2022		10.15680/IJIRSET.2022.1102001	**Other**
52	A survey on phishing website detection using exterme learning machine	Shilpa Sorate	Electrical Engineering	IJRPR	2022		https://ijrpr.com/uploads/V3ISSUE5/IJRPR3883.pdf	**Other**
53	IOT Based industrial plant saftey gas leakage	Shilpa Sorate	Electrical Engineering	IJARIIE	2022		https://ijariie.com/AdminUploadPdf/IOT_Based_Industrial_Plan_Safety_Gas_Leakage_ijariie16731.pdf	**Other**

54	phishing website detection using extreme machine learning.	Bhapkar Ashwini	Computer Engineering	IJRPR	2022		https://ijrpr.com/uploads/V3ISSUE5/IJRPR3883.pdf	Other
55	phishing website detection using extreme machine learning.	Ghadge Siddhi	Computer Engineering	IJRPR	2022		https://ijrpr.com/uploads/V3ISSUE5/IJRPR3883.pdf	Other
56	Survey on an Automated Malaria Prediction Using AI	Kolekar Priyanka	Computer Engineering	IJIRSET	2022		https://www.ijirset.com/upload/2022/july/153_Malaria_NC.pdf	Other
57	Malaria Detection Using Hybrid Approach	Kolekar Priyanka	Computer Engineering	IJIRSET	2022		http://www.ijirset.com/upload/2022/july/153_Malaria_NC.pdf	Other
58	Emotion Detection System Using MAchineLearning	Sarika Pawar	Computer Engineering	IJARIIE	2022	https://ijariie.com	http://ici2tm.sinhgad.edu/pcproc/ICI2TM2017_P/data/IC17029.pdf	Other
59	TO STUDY AND COMPARISON OF SOUND INTENSITY AT DIFFERENT PLACES	Mr. Sunil M. Pondkule, Mr. Kaiyyum C. Attar	Mechanical Enginerin	IJRAR	2022		http://ijrar.org/viewfull.php?&p_id=IJRAR22C2011	UGC

3.2.1 Number of papers published per teacher in the Journals notified on UGC website during the years

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal
Malaria Dtetection Using Hybrid Approach	Miss Kolekar Priyanka ,Dr Chaudhari S.B.	Computer	IJIRSET	2022	2319-8753,2347-6710	http://www.ijirset.com/upload/2022/july/153_Malaria_NC.pdf
Emotion Detection System Using Machine Learning	Prof.Pawar Sarika,Harshda pisal,Mangesh Shelke ,Nitin Nimbalkar	Computer	IJARITE	2022	2395-4396	http://ijariie.com/FormDetails.aspx?MenuScriptId=215014
To Study And Comprision Of Sound Intensity At Different Places.	Attar.K.C,Bnasode.D.V,Pnachukant.D.H,Pondkule.S.M.	Physics	IJRAR	2022	2348-1269,2349-5138	https://ijrar.org/archive.php?vol=9&issue=3
Mechanical Characterization and Microstructural Analysis of Hybrid Composites	Sunder.J.J, Jayavelu.U.P,Salunkhe Sachin,Hussein.M.A.,Gawade,S.R.	Mechanical	MDPI	2022		https://www.mdpi.com/2073-4352/12/9/1207
Spam Detection and Fake User Identification	Prof.Pawar.S.D. ,Holkar Omkar,Waghmare Akash.	Computer	IJARCCE	2022	2278-1021,2319-5940	https://ijsrem.com/volume07issue05may2023/
A Survey On Control Electric Devices by using Android Phone (Home Automation)	Shubham Jagtap, Sahil Chavan	Computer	IJARCCE	2022	2278-1021,2319-5940	https://ijarcce.com/issues/volume-11-issue-12-december-2022/
Real Time Face Mask And Temperature Detection With Alert System.	Shah.S.N,Pawar Sanchita,Jagtap Sujata	computer	IJARCCE	2022	2278-1021,2319-5940	https://ijarcce.com/wp-content/uploads/2022/11/IJARCCE.2022.111108.pdf
Survey Paper on Crop Recommendation System For Precision Agriculture In ML	Shah.S.N, Kharade Rohit,Kumbhar Omkar	Computer	IJARCCE	2022	2278-1021,2319-5940	https://ijarcce.com/papers/survey-paper-on-crop-recommendation-system-for-precision-agriculture-in-ml/
Survey Paper on Development Of Tour Guide APP	Shah.S.N ,Shinde Avishkar ,Lonkar Yash	Computer	IJARCCE	2022	2278-1021,2319-5940	https://ijarcce.com/papers/survey-paper-on-development-of-tour-guide-app/
A Survey Report on Detecting a diseases of plants using machine learning	shah.S.N. , Bhapkar Akash ,Gaikwad Aditya	Computer	IJARCCE	2022	2278-1021,2319-5940	https://www.mdpi.com/2079-9292/11/17/2641
Survey Paper on COVID Vaccination Detection Using Aadhar QR Code	Waghmode.P.S. , Jagtap Apeksha , Madane Sayali	Computer	IJARCCE	2022	2278-1021,2319-5940	https://ijarcce.com/papers/survey-paper-on-covid-vaccination-detection-using-aadhar-qr-code/
Heart Disease Prediction Using Machine Learning	Waghmode P.P. , Wayase Dhanashri ,Kharat Dipali	Computer	IJARCCE	2022	2278-1021,2319-5940	https://ijarcce.com/papers/heart-disease-prediction-using-machine-learning-3/
Survey Paper on Flight Ticket Price Prediction Using Machine Learning	Kokare.S.A. , Kamble Priya,Thorat Komal	Computer	IJARCCE	2022	2278-1021,2319-5940	https://ijarcce.com/papers/survey-paper-on-flight-ticket-price-prediction-using-machine-learning/
Pune House Price Prediction Using Machine Learning	Bhapkar.A.D. , Tekawade Prerana, Adsul Sapna	Computer	IJARCCE	2022	2278-1021,2319-5940	https://ijsrem.com/download/house-price-prediction-using-machine-learning-2/
A Survey on credit card fraud detection system using machine learning	Bhapkar.A.D. , Shweta Jadhav,Rutuja Jagtap, Vijeshree Jagtap	Computer	IJARIIE	2022	2395-4396	http://ijariie.com/FormDetails.aspx?MenuScriptId=215015
Effect of Presence of holes locations and size on spring back in U bent components	Gawade Sharad, Vilas Nandedkar, G.Dharmalingam,Sachin Salinkhe.	Mechanical	Science Direct	2023		https://www.sciencedirect.com/science/article/abs/pii/S2214785323006089
Development of the AL12 SiCuFe Alloy Foam Composites with ZrSiO4	Sresh Kumar ,Sanjeev Kumar ,Paradeep kumar Nagpal ,Sharad Gawade	Mechanical	MDPI	2023		https://www.mdpi.com/2075-4701/13/4/685

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3.2.1 Number of papers published per teacher in the Journals notified on UGC website during the last five years (5)								
Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
						Link to website of the Journal	Link to article/paper/abstract of the article	Is it listed in UGC Care list/Scopus/Web of Science/other, mention
Study of Springback in sheet metal bending-FEA and Neural Network approach"	Dr. Gawade Sharad, Dr. Nandedkar V. M	Mechanical Enginering	published in Elsevier Journal, "Procedia Material Science",	2014	ISSN: 2211-8128.		https://doi.org/10.1016/j.mspro.2014.07.100	(UGC listed Journal)
Direct Torque Control of Induction Motor using fuzzy logic	K.P Gawade	Electrical Engineering	IJIREEICE	2016	2321-5526			
Performance improvement of PCC and PTC methods of model-based predictive direct control strategies for electrical drives with multilevel inverter	Sanjay A. Deokar	Electrical Engineering	Journal of Electrical Engineering and Electronic Technology	2017	ISSN: 2325-9833	10.4172/2325-9833-C1-009.	https://www.scitechnol.com/proceedings/performance-improvement-of-pcc-and-ptc-methods-of-modelbased-predictive-direct-control-strategies-for-electrical-drives--3740.html	J-Gate & Index Copernicus)

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Affiliated to University of Pune, Id no.PU/PN Engg./445/2012)
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Performance Evaluation of Dynamic Voltage Restorer Based on Transformer-based Z Source Inverter	Dr Sanjay A. Deokar	Electrical Engineering	International Journal of Power Electronics and Drive System (IJPEDS)	2017	ISSN 2088-8694	http://doi.org/10.11591/ijpeds.v8.i3.pp1101-1108	http://doi.org/10.11591/ijpeds.v8.i3.pp1101-1108	(Scopus Indexed),
Switching Losses Minimization by Using Direct Torque Control of Induction Motor	Dr Sanjay A. Deokar	Electrical Engineering	Journal of Electrical Systems and Information Technology	2017	ISSN: 2314-7172		https://doi.org/10.1016/j.jesit.2016.08.007	Science Direct , Elsevier Pub)
Digital Image Watermarking Using DCT for Image Authentication	Sarika Pawar	Computer Engineering	IJSRD	2017	ISSN:2321 0613	https://www.ijsrd.com	https://ijariie.com/AdminUploadPdf/EMOTION_DETECTION_USNING_MACHINE_LEARNING_ijariie16135.pdf	
A Profit Maximization Scheme in Cloud Computing with QoS	Padalkar Supriya	Computer Engineering	IRJET	2017	e-ISSN:2395-0056	www.irjet.net	https://www.academia.edu/33600778/A_Profit_Maximization_Scheme_in_Cloud_Computing_with_QoS	
Computer vision Suystem for Eye Gaze Tracking	Prof P. P. Sorate	Computer Engineering	International Journal of Modern Computer Science (IJMCS)	2017	2320-7868		https://www.irjet.net/archives/V4/i6/IRJET-V4I6507.pdf	
Survey Paper on Eye Gaze Tracking Methods and Techniques	Prof P. P. Sorate	Computer Engineering	International Research Journal of Engineering and Technology (IRJET)	2017	ISSN: 2395. 0056		https://www.irjet.net/archives/V4/i6/IRJET-V4I6507.pdf	

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A Survey on Controlling Traffic with Subterfuge in Smart Gird to Minimize Message Delay under Jamming	Prof P V Bhagat	Computer Engineering	International Journal of Innovative Research in Computer and Communication Engineering	2017	ISSN(Online) 2320-9801 ISSN (Print) 2320-9798		https://www.semantic scholar.org/paper/A-Survey-on-Controlling-Traffic-with-Subterfuge-in-Bhagat-Bhandari/8fe999e36def032fd0c2a9a8214787 6a1fdc89ee	
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Performance Improvement of PCC and PTC Methods of Model Based Predictive Direct Control Strategies for Electrical Drives using PMSM with Multilevel Inverter	Dr Sanjay A. Deokar	Electrical Engineering	Global Journal of Researches in Engineering: FElectrical and Electronics Engineering	2018	ISSN: 2249-4596		https://www.scitechn ol.com/proceedings/p erformance-improvement-of-pcc-and-ptc-methods-of-modelbased-predictive-direct-control-strategies-for-electrical-drives--3740.html
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Hardware Implementation of Single Phase Modified Quasi-Z-Source Cascaded Hybrid Five Level Invertor	A.V. Golande	Electrical Engineering	International Research Journal of Research and Analytical Reviews (IJRAR)	2019	ISSN: 2348-1269			

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Optimization techniques using DWT-differentiation algorithms for fault detection and relay coordination in a micro grid	Dr Sanjay A Deokar	Electrical Engineering	Electrical Engineering (Springer Journal,SCI)	2021	ISSN-1432-0487	10.1007/s00202 020-01089-1	https://link.springer.com/article/10.1007/s0202-020-01089-1	
Parameters Affecting Springback-A Review	Dr Gawade Sharad, Dr Nandedkar V M	Mechanical Engineering	Design Engineering	2021	ISSN 0011-9342			Scopus Journal
Effect of Orientation on Springback for Component with Hole and without Hole	Dr Gawade Sharad, Dr Nandedkar V M	Mechanical Engineering	Journal of University of Shanghai for Science and Technology	2021			https://jusst.org/wp-content/uploads/2021/06/Effect-of-Orientation-on-Springback-for-Component-with-Hole-and-without-Hole.pdf	Scopus Journal
Springback in Sheet Metal Forming	Dr Gawade Sharad, Dr Nandedkar V M	Mechanical Engineering	Solid State Technology	2021			https://solidstatetechnology.us/index.php/JSST/article/view/10914	(Scopus Journal)
Synthesis & Characterization of Magnesium Zinc Ferrite Nanoparticals by Sol Gel Auto Combustion Methods	Kaiyyum C. Attar, Monika G. Jagatap	General Science	IJRASET	2021	2321-9653		http://dx.doi.org/10.22214/ijraset 2021 334 34	
Effect of Light Intensity & Distance of The Light Source on the Output Voltage of Solar Cell	Dhananjay Bansode, Pachukaji Holkar, Kaiyyum C. Attar, Mrunali Chavan	General Science	PENSEE	2021	0031-4773			UGC

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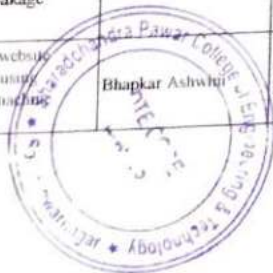# Sharadchandra Pawar College of Engineering & Technology

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Synthesis & Characterization of Nickel-Bismuth Aluminium Ferrite Nanoparticals by Sol Gel Auto Combustion Methods	Pachukant Holkar, Kaiyyum C. Attar, C.S. Vhawal	General Science	IJISET	2021	2348-7968		https://ijiset.com/vol8/v8s2/IJISET_V8_I02_25.pdf	
Modal Analysis of Carbon Fiber and Carbon Fiber- Rubber Composite Plates.	Mr. Ghadage M.M., Mr. Bhagwat V.B.	Mechanical Enginerin	Journal of Interdisciplinary Cycle Research	2021			https://drive.google.com/file/d/1vm600C98SufaSDTR6LGXTcSwvcYQ2CaR/view?usp=sharing	UGC
Use of Industrial by-product to Produce Eco Friendly Geopolymer Concrete	Miss Smita M. Patil, Mr Sanket P Kulkarni, Mr Chinmay V. Naik	Civil Engineering	IJIRSET	2022	e-ISSN: 2319-8753,		10.15680/IJIRSET.2022.1102001	
A survey on phishing website detection using exterme learning machine	Shilpa Sorate	Electrical Engineerin	IJRPR	2022	2582-7421		https://ijrpr.com/uploads/V3ISSUE5/IJRPR3883.pdf	
IOT Based industrial plant saftey gas leakage	Shilpa Sorate	Electrical Enginecrin	IJARIIE	2022	2395-4396		https://ijariie.com/AdminUploadPdf/IOT_Based_Industrial_Plan_Safety_Gas_Leakage_ijariie16731.pdf	
phishing website detection using extreme machine learning	Bhapkar Ashwini	Computer Engineering	IJRPR	2022	ISSN 2582-7421		https://ijrpr.com/uploads/V3ISSUE5/IJRPR3883.pdf	

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phishing website detection using extreme machine learning	Ghadge Siddhi	Computer Engineering	IJRPR	2022	ISSN 2582-7421		https://ijrpr.com/uploads/V3ISSUE5/IJRPR3883.pdf	
Survey on an Automated Malaria Prediction Using AI	Kolekar Priyanka	Computer Engineering	IJIRSET	2022	ISSN:2319-8753		https://www.ijirset.com/upload/2022/july/153_Malaria_NC.pdf	
Malaria Detection Using Hybrid Approach	Kolekar Priyanka	Computer Engineering	IJIRSET	2022	ISSN:2347-6710		http://www.ijirset.com/upload/2022/july/153_Malaria_NC.pdf	
Emotion Detection System Using MAchineLearning	Sarika Pawar	Computer Engineering	IJARIIE	2022	ISSN:2395-4396	https://ijariie.com	http://ici2tm.sinhgad.edu/pcproc/ICI2TM2017_P/data/IC17029.pdf	
TO STUDY AND COMPARISON OF SOUND INTENSITY AT DIFFERENT PLACES	Mr. Sunil M. Pondkule, Mr. Kaiyyum C. Attar	Mechanical Enginerin	IJRAR	2022	ISSN 2349-5138		http://ijrar.org/viewful.php?&p_id=IJRAR22C2011	UGC

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Springback in sheet metal U bending-FEA and Neural Network approach

Gawade Sharad [a], Dr. V. M. Nandedkar [b]

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Abstract

All the forming processes are more or less prone to the springback depending upon different material properties and process parameters. Bending processes are very widely used in the manufacturing of sheet metal products, particularly in automobile industry. It is a well known fact that when sheet metal is formed, it does not form the desired shape because of the springback. In the present paper the springback is predicted by using finite element analysis, for various die radii, sheet thicknesses, R/t ratios and strength coefficients, for two different materials. The simple neural network is used to map the springback obtained from finite element analysis. The results obtained by FE simulations compared with simple neural network are found in good agreement.
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Selection and peer-review under responsibility of the Gokaraju Rangaraju Institute of Engineering and Technology (GRIET).

Keywords: Bending; FEA; neural network; R/t, springback.

1. Introduction

Bending processes are very widely used in the manufacturing of sheet metal products, particularly in automobile industry. It is a well known fact that when sheet metal is formed, it does not form the desired shape because of the springback. The springback is due to the elastic stresses remaining in the bent up part, which try to relieve and in trying so there is a movement of the metal. This movement of the metal is called springback.

Measuring the springback by experimental process is costly and time consuming. In the recent years finite element softwares are very widely used for the prediction of the springback. Also the springback is difficult to be calculated exactly by table checking and experience. The neural network helps to map the non linear relationship. So from the available data, the springback can be easily calculated exactly, by using neural network

Luc Papeleux et al. (2002) studied the influence of various parameters such as Blank Holder Force, friction, spatial integration, time integration scheme for U draw bending by using commercial code OPTRIS. M. Bakshi-Joybari et al. (2008) studied the effect of significant parameters including sheet thickness, sheet anisotropy and

Performance Improvement of PCC and PTC Methods of Model-Based Predictive Direct Control Strategies for Electrical Drives using PMSM with Multilevel Inverter

By Suraj Karpe, Sanjay A. Deokar & Arati M. Dixit

Abstract- In Power Electronics, Predictive Current control (PCC) and Predictive Torque control (PTC) methods are advanced control strategy. To control a Permanent Magnet Synchronous motor machine (PMSM) or induction machine (IM), the predictive torque control (PTC) method evaluates the stator flux and electromagnetic torque in the cost function and Predictive Current control (PCC) [1] considers the errors between the current reference and the measured current in the cost function. The switching vector selected for the use in IGBTs minimizes the error between the references and the predicted values. The system constraints can be easily included [4, 5]. The weighting factor is not necessary.

Keywords: electrical drives, predictive current control (PCC), predictive torque control (PTC), permanent magnet synchronous motor (PMSM), induction motor, 15-level h-bridge multilevel inverter, voltage source inverter (VSI).
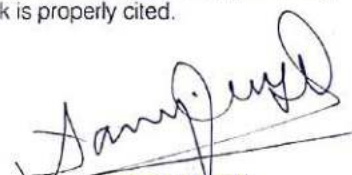
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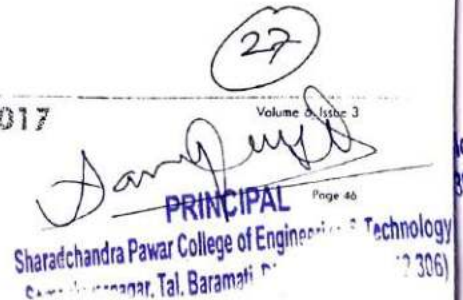
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Performance improvement of PCC and PTC methods of model-based predictive direct control strategies for electrical drives with multilevel inverter

Suraj Rajesh Karpe, Sanjay A Deokar and Arati M Dixit
Savitribai Phule Pune University, India

In power electronics, Predictive Current Control (PCC) and Predictive Torque Control (PTC) methods are advanced control strategy. To control a Permanent Magnet Synchronous Motor Machine (PMSM) or Induction Machine (IM), the PTC method evaluates the stator flux and electromagnetic torque in the cost function and PCC considers the errors between the current reference and the measured current in the cost function. The switching vector selected for the use in IGBTs minimizes the error between the references and the predicted values. The system constraints can be easily included. Both the PTC and PCC methods are most useful in direct control methods with PMSM method gives 10% to 30% more torque than an induction motor, also do not require modulator. Induction motor work on only lagging power factor means, it can produce only 70-90% of torque produced by PMSM with same current. PCC and PTC method with 15-level H-bridge multilevel inverter using PMSM reduces 23% more THD in torque, speed and stator current compared to PCC and PTC method with 15-level H-bridge multilevel inverter using induction motor. The switching pattern of semiconductor switches used to get better performance of multilevel inverter. In this paper, the PTC and PCC methods with 15-level H-bridge multilevel inverter using PMSM and IM are carried out; gives excellent torque and flux responses, robust and a stable operation achieved compared to the PTC and PCC methods with 2-level voltage source inverter. This novel method attracts the researchers very quickly due to its straightforward algorithm and good performances both in steady and transient states.

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Performance Evaluation of Dynamic Voltage Restorer Based on Transformer-based Z Source Inverter

Deshpande Chinmay V, Deshpande Chaitanya V, Deokar Sanjay A
Department of Electrical Engineering, Zeal Education Society's Zeal College of Engineering and Research, India

Article Info	ABSTRACT
	In this paper, latest technology is introduced in substitution to conventional voltage and current type inverter with Transformer based impedance (Z) source inverter in voltage sag assessment and mitigation and compared with voltage source inverter based dynamic voltage restorer. Transformer based impedance source inverters (Trans-Z source inverters) are newly proposed inverters that can be used to overcome downside of voltage source inverter, current source inverter and impedance source (Z-source) inverter. T-Z source inverter consists of transformer with high frequency and low leakage inductance along with low reactive component compared with conventional Z source inverter. In case of T-Z source inverter, voltage stress throughout Z-source capacitor is reduced along with inrush current limitation at startup. This paper presents modeling of T-Z source inverter based dynamic voltage restorer using MATLAB/SIMULINK software along with its THD analysis which is compared with VSI based dynamic voltage restorer. Here abc to dq0 control algorithm is employed. The control technique which is employed for simulation shows excellent results for voltage sag and swell compensation.

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1. INTRODUCTION

Constant voltage is prime requirement of any customer. Most of the lodes connected to system are sensitive to voltage variation. [1] It is risky to operate the equipment below certain voltage limit. In order to supply continuous power to sensitive loads which are connected to system, number of series connected devices can be used [2]. The primary role of these devices is to supply continuous power in order to prevent it from financial losses. The device that can be used to supply constant voltage to the sensitive loads connected to system irrespective of faults and load switching and restores the voltage quickly in seconds is Dynamic Voltage Restorer [3].

Generally DVR is designed in association with voltage source inverter, current source inverter or Z source inverter. The Z source inverter is single stage power converter which provides both buck and boost facility [3]. In order to enhance reliability of system, both the power switches from same leg can be switch on simultaneously without causing problem of short-circuits which is not possible in case of conventional voltage and current source inverter. For this purpose, two capacitors and two inductors connected in unique X shape constitutes impedance part of Z source inverter [4]. But current drawn from source is discontinuous in case of conventional Z source inverter. Also voltage across Z source capacitor is more than input voltage, which results in use of high capacitor voltage capacitors which are more expensive [5].

To solve demerits in concerned with conventional Z source inverter, newly developed transformer based impedance source inverter is used along with dynamic voltage restorer which provides higher voltage gain and compact voltage stress. The proposed system along with T-Z source inverter gives less THD and

Switching losses minimization by using direct torque control of induction motor

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Abstract

Direct torque control is becoming the industrial standards for induction motor torque control. This paper presents switching loss minimization technique of improved direct torque control (DTC) of induction motor. Direct torque control (DTC) of an induction motor supplied by a voltage source inverter is a simple scheme that does not need long computation time, can be implanted without speed sensors and is insensitive to parameter variations. In principle, the motor terminal voltages and currents are used to estimate the motor flux and torque. Based on the instantaneous errors in torque and stator flux magnitude and estimates of the flux position, a voltage vector is selected to limit the flux and torque errors within their flux and torque hysteresis bands. In the conventional DTC, the selected voltage vector applies for the whole switching period, irrespective of the magnitude of the torque error. DTC drive gives variable switching frequency and high torque ripple. DTC gives torque and flux ripples because no any VSI states are capable to generate the exact voltage vector from switching table required to make zero both the torque electromagnetic error and the stator flux error. To minimize this problem, a torque hysteresis band with variable amplitude fuzzy logic controller is proposed. The fuzzy logic controller is used to reduce the flux and torque ripples and it improves performance DTC especially at low speed. A duty ratio control scheme for an inverter-fed induction machine using DTC method is presented in this article. The use of the duty ratio control gives improved steady state torque response, with less torque ripple than the conventional DTC. Fuzzy logic control (FLC) used to implement the duty ratio controller. Total harmonic distortion (THD) calculation of electromagnetic torque, rotor speed and stator current of DTC and DTC with fuzzy has done successfully in this article. With the help of FLC with duty ratio, 8% THD in torque, speed and stator current have minimized compared with DTC (Uddin and Hafeez, 2012). In this paper, switching loses minimization technique through THD minimization. Switching losses are minimized because the transistors are only switched when it is needed to keep torque and flux within their hysteresis bounds, improve efficiency & reduced losses. Direct torque control with the fuzzy logic controller has verified by MATLAB SIMULINK and experimentally.

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Keywords: Direct torque control; Induction motor; Fuzzy logic; Torque ripple minimization; Fuzzy logic controller

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Digital Image Watermarking Using DCT for Image Authentication

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Abstract: As the need for information over network is high.therefore such Media files which are shared in networking sites and other areas must be highly protected to prevent files from hackers. Watermarking is a prevention technique used to prevent media files like images, audio and video files.The introduction of 3G wireless communication systems, together with the fast growing distribution of digital images and the growing interest on their originality initiates an sudden need of authenticating images received by fallible channels, such as public Internet and wireless networks. To meet this need, a content based image authentication scheme that is suitable for an insecure network and robust to prevent transmission errors is projected.In this scheme, multi-scale features are used to make digital signatures robust to prevent image degradations and key dependent parametric wavelet filters are engaged to improve the security against counterfeit attacks. This scheme is also able to characterize tampering areas in the attacked image. The information about the file encryption using Advance Encrypt Standard algorithm and watermarking using discrete cosine Transform Algorithm.

Keywords—Authentication,Digital Signature,Water Marking,Content authenticity verification, Error concealment, Embedding, Cryptography.

I. INTRODUCTION

Internet is a tremendous communicating channel. Because of the progress in networking and multimedia applications, multimedia contents can easily be attacked by the unauthorized persons. To confirm content integrity and to forbid duplication, image authentication method have been emerged. A secure digital signature scheme is one of the image authentication method that is suitable for an vulnerable environment,and is robust to transmission errors.In digital watermarking, a watermark is enclosed into a cover image in such a way that the consequent watermarked signal is robust to certain distortion caused by either standard data processing in a affable environment or malicious attacks in an unfriendly environment.

The system is proposed to provide authentication or security for digital media.In system we use Digital Watermarking image integrity to implement it we use Discrete Cosine Transform and for image encryption SHA Algorithm.A large number of networked multimedia applications have been created because of the advances in digital media technologies and networking. Those networked multimedia applications are often employed in a distributed wireless network environment that makes multimedia contents able to be attacked or harmed by the attackers. For insecure environments, it is possible for an

A Profit Maximization Scheme in Cloud Computing with QoS

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Abstract - Cloud computing offer services and resources on demand anyplace and anytime to client. In cloud service supplier profit is one among the foremost vital thought. Typically single future dealings theme is employed to configure cloud platform however those single future dealings theme doesn't offer guarantee service quality and resources waste. During this paper, firstly double resource dealings theme designed. And short term dealings theme and future dealings theme are combined, thus existing resources. M/M/m+D queuing model is employed in double dealings theme .In this paper profit maximization downside solved by victimization double quality guaranteed(DQG) theme, finally offer warranted service quality of all requests and scale back resource waste greatly, however additionally get additional profit than the latter. Associate in nursing effective and efficient thanks to offer computing resources and services to customers on demand, cloud computing has become additional and additional in style. From cloud service supplier's perspective, profit is one among the foremost vital issues, and it's principally determined by the configuration of a cloud service platform beneath given market demand. However, one semi-permanent dealings theme is typically adopted to configure a cloud platform that cannot guarantee the service quality however ends up in serious resource waste. During this paper, a double resource dealings theme is intended firstly within which short dealings and semi permanent dealings are combined aiming at the prevailing problems. This double dealings theme will effectively guarantee the standard of service of all requests and scale back the resource waste greatly. Secondly, a service system is taken into account as Associate in Nursing M/M/m+D queuing model and also the performance indicators that affect the profit of our double dealings theme are analyzed, e.g., the common charge, the magnitude relation of requests that require temporary servers. Thirdly, a profit maximization downside is developed for the double dealings theme and also the optimized configuration of a cloud platform is obtained by resolution the profit maximization downside.

Key Words: Single Quality guaranteed, Double Quality guaranteed, Service Level Agreement, First Come First Serve, Single Quality Unguaranteed.

1. INTRODUCTION

An effective and efficient thanks to give computing resources and services to customers on demand, cloud computing has become additional and additional common. From cloud service supplier's perspective, profit is one in all the foremost vital issues, and it's principally determined by the configuration of a cloud service platform beneath given market demand. However, one semi-permanent dealings theme is sometimes adopted to configure a cloud platform that cannot guarantee the service quality however ends up in serious resource waste. During this paper, a double resource dealings theme is intended firstly within which short dealings and semi-permanent dealings are combined aiming at the prevailing problems. This double dealings theme will effectively guarantee the standard of service of all requests and scale back the resource waste greatly. Secondly, a service system is taken into account as AN M/M/m+D queuing model and also the performance indicators that affect the profit of our double dealings theme are analyzed, e.g., the common charge, the quantitative relation of requests that require temporary servers. Thirdly, a profit maximization downside is developed for the double dealings theme and also the optimized configuration of a cloud platform is obtained by finding the profit maximization downside. Finally, a series of calculations are conducted to check the profit of our projected theme therewith of the one dealings theme. The results show that our theme cannot solely guarantee the service quality of all requests, however conjointly acquire additional profit than the latter.

2. SYSTEM DESCRIPTION

2.1 Functionality summary

Cloud Computing Cloud computing describes a type of outsourcing of computer services, similar to the way in which the supply of electricity is outsourced. Users can simply use it. They do not need to worry where the electricity is from, how it is made, or transported. Every month, they pay for what they consumed. The idea behind cloud computing is similar: The user can simply use storage, computing power, or specially crafted development environments, without having to worry how these work internally. Cloud computing is usually

Survey Paper on Eye Gaze Tracking Methods and Techniques

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Abstract - Eye movement tracking is a technique use for checking the usability problems in the context of Human Computer Interaction (HCI). Initially they are present tracking technology and key elements. Eye movement tracking technique based on the behavior of the user when they are looking. It can use for different kinds of techniques i.e. "electro-oculography(EOG), Sceleral Search Coils, infrared oculography(IOG), video oculography (VOG), different models, probable approaches i.e. "shape based approach, appearance based methods, 2D and 3D models based approach and different software algorithms for pupil detection Eye tracking and Gaze estimation are the most challenging areas in computer vision. The eye tracking applications likes human computer interaction, brain computer interaction, assistive technology, e-learning, psychology investigation, pilot training assistance, virtual and augmented reality and so on.

Key Words: Electro-occulography, Video occulography, appearance based method, HCI, Eye tracking, Gaze estimation.

1. INTRODUCTION

Face is the key of mind and eyes are the window to the person. Eye movements provide rich information to a person. The study of eye movement helps to determine people where they are looking. Eye tracking is the measure of eye movement and gaze tracking is the analysis of eye tracking info and head movement info. The gaze tracking applications like in robotics, psychological studies, cognitive science. In psychological studies, they are used to measure the behavioural responses. [1] In computer vision as an input device and in making as a tool to obtain optimum location to place an advertisement. The main application of neuroscience is Eye tracking and is well-organized time and effectual cost, as well as low problem and compare with other neurological methods. Eye tracking helps the neuroscience Eye movements, such as saccades, fixation and smooth pursuit, Visual processing, interaction between eye movements, vision, and performance tasks Object-by-object search mechanisms in attention studies, Eye movement patterns in visual neglect, Neurological functions involved in perceptual decision making, Attention and brain imaging have been investigated neuroscience.

In Fig. [1] Hierarchy of eye tracking applications likes Interactive and diagnostic. The interactive applications are divided into two types selective and Gaze contingent. Selective systems use the point of gaze as to a pointing device such as the mouse. The selective system can be use in handicapped users. Gaze-contingent systems exploit knowledge of the user's gaze to facilitate the rapid rendering of complex displays.
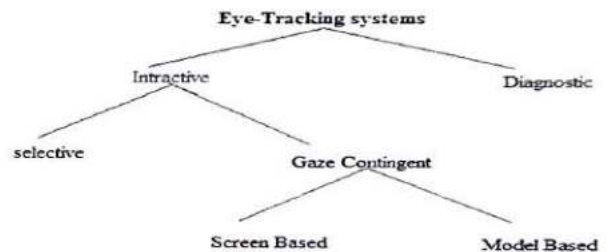

Fig.1 Hierarchy of eye-tracking application [2]

2. METHOD OF EYE TRACKING

The recording of the eye position and eye movement is called occulography. The different types of methods are used in eye tracking. [2]
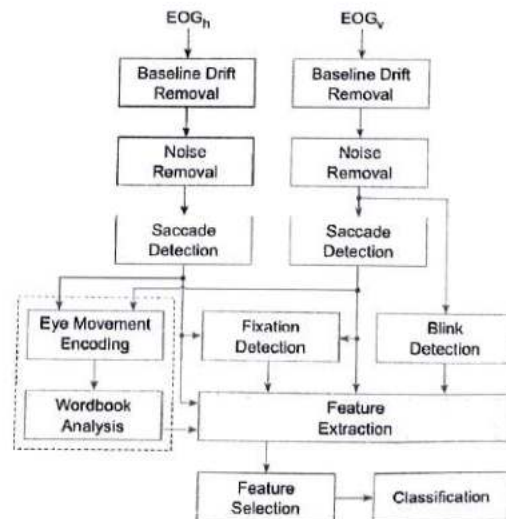
2.1 EOG (Electro-occulography):

Fig. 2 EOG Method architecture

Survey on Controlling Traffic with Subterfuge 1 Smart Gird to Minimize Message Delay under amming Attack

L. Priyanka V. Bhagat, Gayatri Bhandari · Published 2017 · Computer Science, Engineering

mart gird is a cyber-physical system that integrates power infrastructures with information technologies. To ilitate efficient information exchange, wireless networks have been proposed to be widely used in the smart grid. wever, the jamming attack that constantly broadcasts radio interference is a primary security threat to prevent deployment of wireless networks in the smart grid. Hence, spread spectrum systems, which provide jamming ilience via multiple frequency and code channels, must be adapted to the smart grid for secure wireless mmunications, while at the same time providing latency guarantee for control messages. An open question is w to minimize message delay for timely smart grid communication under any potential jamming attack. To dress this issue, we provide a paradigm shift from the case-by-case methodology, which is widely used in sting works to investigate well-adopted attack models, to the worst-case methodology, which offers delay formance guarantee for smart grid applications under any attack. We first define a generic jamming process t characterizes a wide range of existing attack models. Then, we show that in all strategies under the generic cess, the worst-case message delay is a U-shaped function of network traffic load. This indicates that, restingly, increasing a fair amount of traffic can in fact improve the worstcase delay performance. Collapse

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Fault Current Limiter by using Series Transformer for Distribution System based on SCR

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Abstract— Due to the complexity of distribution network and the generations, fault current is the major problem in the system. This paper shows the SCR Based Fault Current Limiter by Using Series Transformer for Distribution System (SCRBFCLBUST). The utilization of transformer based solid state fault current limiter gives an effective way to control the magnitude of fault current. This reduces the cost of high circuit breaker. For controlling the fault current, the primary winding of an isolating transformer is connected in series with the line while the secondary side is connected to a thyristor in parallel. By limiting the magnitude the fault current is controlled. Using this SCRBFCLBUST the overvoltage can be controlled. It improves the power quality by simple structure and reducing the power quality problems. Its cost is significantly low. This SCRBFCLBUST can control the fault current without delay and increase the power quality of the system.

Key words: Fault Current Limiter (FCL), Power Quality, Inrush Current Limiter (ICL), Short Circuit Current, Isolating Transformer, SCRBFCLBUST, Solid State Fault Current Limiter (SSFCL)

I. INTRODUCTION

Now-a-days short level is increases beyond the capacity of circuit breakers due to developing the power system networks and their interconnections. Short circuit fault can causes many power quality related issues such as transient overvoltage, isolation failure and insulation failure. There are many solutions on these problems such as replacing the protective equipments which are very costly [1]. In distribution network fuse is mainly used as protective device which is self-triggering, less-cost, compact and reliable. It has fault current interruption capacity without using sensors [2]. But it can be used only once and requires manual replacement. Transformer can be used for fault current limitation by increasing its impedance but it causes additional losses and voltage profile requires to be maintained [3]. Circuit breaker is another protective device which operates manually or automatically. The circuit breakers having high-current interruption capacity are expensive. Replacement of circuit breakers is expensive to reduce the increasing fault current level [3].

In recent years "Fault Current Limiter" (FCL) has been proposed and used for limiting the magnitude of fault current. This scheme not only limit the value of fault current and inrush current but also increases reliability, power quality and transient stability of the system [4]-[8]. This can limit the fault current and reduces the costly replacement of switch gears.

A. Fault Current Limiter:

FCL is a series connected variable impedance device which limits the current under fault condition. During normal operating condition FCL have very low impedance and has very low or no effect on the power quality. During abnormal condition it has high impedance and it limit the fault current to an acceptable level of circuit breaker.

There are many types of FCL which developed around the world by many research institutions. Solid state fault current limiter(SSFCL), bridge type fault current limiter, superconducting fault current limiter and static fault current limiter(SFCL) are different types of fault current limiters which gives the fast response, improve power quality, reliability and stability of the system during fault.

This paper employ, SCRBFCLBUST which limit the fault current to an acceptable level which can safely interrupted by C.B. The proposed Transformer based Solid State Fault Current Limiter is a simple in structure which limit the value of fault current to some acceptable level which can safely interrupted by C.B. And it also reduces harmonic losses and increases power quality, reliability and transient stability during fault as compared to the four newly proposed fault current limiters. So IGBTBFCLBUST is simple structure acting best than above mentioned FCLs [9].
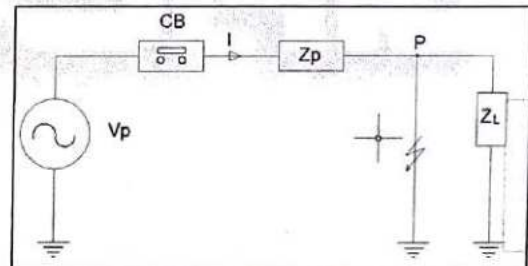
## II. ROLE OF FAULT CURRENT LIMITER

Fig. 1: Power Network without FCL

Fig.1 shows an example of power system network which consist of supply voltage Vs, system internal impedance Zp and load Zl. In normal operating condition the current flowing in the given network is

$$I = \frac{V_p}{Z_p + Z_l} \qquad (1)$$

And in abnormal condition i.e. when fault occurs in the system, the circuit current at point P is given by

$$I = \frac{V_p}{Z_s} \qquad (2)$$

Hence, due to short circuited load impedance becomes zero and only system's internal impedance remains in the circuit which is very less. So fault current increases rapidly as compared with the normal value of current. And this heavy current damages the components among the supply and load. So proper precautions are require to ensure the component safety and their protection under the faulty condition. Hence FCL performs the main role to limit the
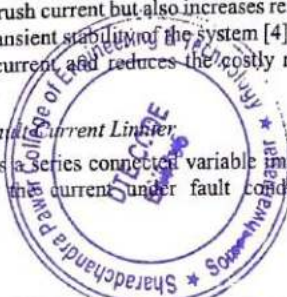
SWITCHING LOSSES MINIMIZATION AND PERFORMANCE IMPROVEMENT OF PCC AND PTC METHODS OF MODEL PREDICTIVE DIRECT TORQUE CONTROL DRIVES WITH VOLTAGE SOURCE INVERTER

Mr.Suraj r. Karpe[1], Dr.S.A.Deokar[2], Dr.A.M.Dixit[3]

Abstract- In Power Electronics, Predictive Current control (PCC) and Predictive Torque control (PTC) methods are advanced control strategy. To control a Permanent Magnet Synchronous motor machine (PMSM), the predictive torque control (PTC) method evaluates the stator flux and electromagnetic torque in the cost function and Predictive Current control (PCC) [1] considers the errors between the current reference and the measured current in the cost function. The switching vector selected for the use in IGBTs minimizes the error between the references and the predicted values. The system constraints can be easily included [4, 5]. The weighting factor is not necessary. Both the PTC and PCC methods are most useful direct control methods with PMSM method gives 10% to 30% more torque than an induction motor also not require modulator [3]. Induction motor work on only lagging power factor means it can produce only 70-90% of torque produced by PMSM with same current. PCC and PTC method with 2-level inverter using PMSM reduces 36% more THD in torque, speed and stator current compared to PCC and PTC method with 2-level inverter using induction motor [21]. In this paper, switching loses minimization technique through THD minimization. Switching losses are minimized because the transistors are only switched when it is needed to keep torque and flux within their bounds. The switching pattern of semiconductor switches used to get better performance of multilevel inverter. This scheme decreases the switching loss and also increases the efficiency & reduced losses. In this paper, the PTC and PCC methods with voltage source inverter using PMSM are carried out and gives excellent torque and flux responses, robust, and stable operation achieved compared to the PTC and PCC methods with 2-level voltage source inverter using IM. This novel method attracted the researchers very quickly due to its straightforward algorithm and good performances both in steady and transient states [8].

*Index Terms—*Electrical drives, predictive current control (PCC), predictive torque control (PTC).Permanent Magnet Synchronous Motor (PMSM), Induction Motor (IM), Voltage Source Inverter (VSI).

INTRODUCTION:

DTC drive in last decade becomes one possible alternative to the well-known Vector Control of Induction Machines. Its main characteristic is better performance with several advantages based on its simpler structure and control diagram. DTC (Direct Torque Control) is described by the name, by directly controlled torque and flux and indirectly controlled stator current and voltage [2]. The DTC has some advantages comparison with the conventional vector-controlled drives, like Approximately sinusoidal stator currents and stator fluxes, High dynamic performance even at locked rotor and standstill, Absences of co-ordinates transform, Absences of mechanical transducers, Current regulators, PWM pulse generation, PI control of flux and torque and co-ordinate transformation are not required. Very simple control scheme and low computation time, Reduced parameters sensitivity, superior dynamic properties. Conventional DTC has also some pitfall are possible problems during starting and low speed operation, Variable switching frequency. To solve this demerit many research efforts have been made. Predictive DTC [4], DTC by using space vector modulation, Band-constraining DTC [2] [11] are available methods for the torque ripple reduction.

Predictive Current control (PCC) and Predictive Torque control (PTC) methods are promising methods [10]. Along reducing torque ripples, the FCS-PTC method also illustrates a number of advantages, like the easy inclusion of constraints, easy implementation, straightforward algorithm and fast dynamic responses. The basic concept of model predictive direct torque control (MPDTC) method is to calculate the required control signals in advance [6]. In the MPDTC method, pulse width modulation is needless. The inverter model is required in the control method. During MPDTC, the PTC and PCC method calculates all possible voltage vectors within one sampling interval and selects the best one by using an optimization cost function [7]. To-date, the PCC and PTC methods have been adapted in many operational situations and widely investigated, as given in the articles [8] [9].

Model predictive control (MPC) in recent years has received convincingly contemplation and has gained demand in the power electronics and industrial drives association. This MPC control strategy was first introduced in 1970, developed for process control applications, is used commonly in the industry with numerous applications reported [4]. The basic perception of model predictive control methods is that the decision of the controller is not centered on past state of the system, but with the predicted behavior of the state variables and proper selection of the controlled variable either offline or online. MPC is also referred as receding horizon control, as where its main perception is to reflect an infinite prediction horizon by constantly sliding the prediction horizon. The current expansion and new orientation in the area of MPC mentioned in [5]. Due to simple in concept, the
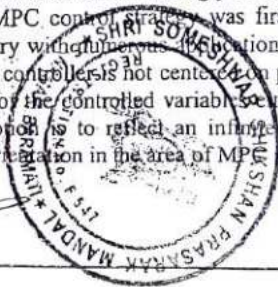
Research Paper

Switching losses minimization and performance improvement of PCC and PTC methods of model predictive direct torque control drives with 15-level inverter

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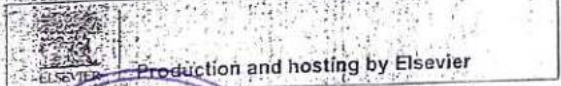[c] Department of Technology, SPPU, Pune, India

Abstract

In power electronics, Predictive Current control (PCC) and Predictive Torque control (PTC) methods are advanced control strategy. To control an induction machine (IM), the Predictive Torque control (PTC) method evaluates the stator flux and electromagnetic torque in the cost function and Predictive Current control (PCC) (Cortés et al., 2008) considers the errors between the current reference and the measured current in the cost function. The switching vector selected for the use in IGBTs minimizes the error between the references and the predicted values. The system constraints can be easily included (Burtscher and Geyer, 2013; Geyer, 2013). The weighting factor is not necessary. The PCC and PTC method with 15-level H-bridge inverter using IM reduce 19% more THD in torque, speed, and stator current compared to the PTC and PCC methods with 2-level voltage source inverter compared to Wang et al. (2015). In this paper, switching losses minimization technique through THD minimization. Switching losses are minimized because the transistors are only switched when it is needed to keep torque and flux within their bounds. The switching pattern of semiconductor switches used to get better performance of multilevel inverter. This scheme decreases the switching loss and also increases the efficiency. In this paper, the PTC and PCC methods with 15-level H-bridge inverter using IM are carried out and gives excellent torque and flux responses, robust, and stable operation achieved compared to the PTC and PCC methods with 2-level voltage source inverter compared to Wang et al. (2015). This novel method attracted the researchers very quickly due to its straightforward algorithm and good performances both in steady and transient states (Wang et al., 2014).
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Keywords: Electrical drives; Predictive Current control (PCC); Predictive Torque control (PTC); Induction motor; 15-level H-bridge inverter; Voltage source inverter (VSI)

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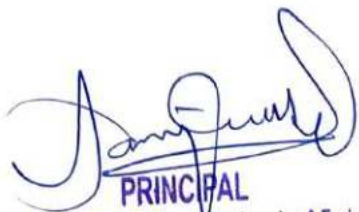
September 11-12, 2017 Singapore

Performance improvement of PCC and PTC methods of model-based predictive direct control strategies for electrical drives with multilevel inverter

Suraj Rajesh Karpe, Sanjay A Deokar and Arati M Dixit
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In power electronics, Predictive Current Control (PCC) and Predictive Torque Control (PTC) methods are advanced control strategy. To control a Permanent Magnet Synchronous Motor Machine (PMSM) or Induction Machine (IM), the PTC method evaluates the stator flux and electromagnetic torque in the cost function and PCC considers the errors between the current reference and the measured current in the cost function. The switching vector selected for the use in IGBTs minimizes the error between the references and the predicted values. The system constraints can be easily included. Both the PTC and PCC methods are most useful in direct control methods with PMSM method gives 10% to 30% more torque than an induction motor, also do not require modulator. Induction motor work on only lagging power factor means, it can produce only 70-90% of torque produced by PMSM with same current. PCC and PTC method with 15-level H-bridge multilevel inverter using PMSM reduces 23% more THD in torque, speed and stator current compared to PCC and PTC method with 15-level H-bridge multilevel inverter using induction motor. The switching pattern of semiconductor switches used to get better performance of multilevel inverter. In this paper, the PTC and PCC methods with 15-level H-bridge multilevel inverter using PMSM and IM are carried out; gives excellent torque and flux responses, robust and a stable operation achieved compared to the PTC and PCC methods with 2-level voltage source inverter. This novel method attracts the researchers very quickly due to its straightforward algorithm and good performances both in steady and transient states.

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Investigation of Springback in U Shape Bending With Holes in Component

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ABSTRACT: One of the sensitive features of the sheet metal forming is the elastic recovery at the time of unloading called springback. Sheet metals are prone to some amount of springback depending on elastic deformation. Obtaining the desired size and shape of the component and also design of die and punch depends on the knowledge of the amount of spring-back. So the accurate prediction of the springback is very important. The springback is affected by the factors such as sheet thickness, material properties, tooling geometry etc. In the present paper the effect of various parameters such as sheet thickness, ratio of die radius to sheet thickness i.e. R /t ratio, strength coefficient and strain hardening exponent on springback are studied for the U shape component without holes and with holes in it.

KEYWORDS: *U bending, Springback, FEA, Sheet thickness, R /t ratio.*

1. INTRODUCTION

Bending process is a very widely used process in forming of parts. These processes are used by automobile industry and aerospace industry for forming of the various parts needed in making the structure of the automobile and airplane. Precision of the formed parts is affected by the elastic recovery during unloading. Because of the elastic recovery, final shape of component is not as desired. This change in shape due to elastic stresses is called springback. Correct prediction of springback is therefore very important as it assist in the design of punch and die. It also helps to obtain the desired shapes with accuracy. Springback measurement by experimental process is costly and time consuming. In the recent year finite element software are very widely used for the prediction of the springback.

LIU Xiaojing et al. [1] investigated the influences of material parameters and process variables for springback for U-shaped parts and studied the effects of material hardening model, element size, the number of integration points and virtual punch velocity on springback prediction accuracy using FEA. Agus Dwi Anggono et al. [2] proposed a new method to compensate the die tool shape due to elastic deviation. M. Bakhshi-Jooybari et al. [3] studied the influence of experimental and numerical parameters such as sheet thickness, sheet anisotropy and punch tip radius for V and U die bending. Luc Papeleux and Jean-Phillippe Ponthot [4] described a classical benchmark of NUMISHEET 93 for U-die bending and studied the influence of parameters such as BHF, friction, spatial integration, time integration scheme on springback. Komgrit Lawanwong et al. [5] with aim to reduce spring-back value of sheet metal in U bending process used the corner setting technique to reduce springback. He observed that, the corner setting technique reduces springback ingbending process but requires high bending force. B. Chongthairungruang et al. [6] used the different material models in Finite Element Analyses of a U-shape forming and compared for

Spring back in Sheet Metal Bending-A Review

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[2](Prof. S.G.G.S. Institute of Engineering and Technology, Nanded-India.)

Abstract: *One of the most sensitive features of the sheet metal forming is the elastic recovery during unloading called spring back. Sheet metals are prone to some amount of spring back depending on elastic deformation. Obtaining the desired size, shape depends on the prediction of spring back. Accurate prediction and controlling of spring back is essential in the design of tools for sheet metal forming. The spring back is affected by the factors such as sheet thickness, material properties, tooling geometry etc. This paper reviews the various parameters affecting spring back such as ratio of die radius to sheet thickness, sheet thickness, blank holder force, coefficient of friction etc.*

Keywords: *Spring back, Sheet metal, Sheet thickness, FEA*

I.Introduction

Bending processes are used to form the sheet metals. These are very familiar processes used in the manufacturing of panel's electronic components, drums, components of automobile vehicle panels etc. The major problem in bending process is the spring back or spring-go. The spring back is a complex phenomenon and it depends on process parameters and material parameters. A lot of research has been done to investigate the parameters affecting spring back and to reduce spring back.

Over bending is the simplest way of combating spring back problem, especially in V-die air bends. The work piece is bent through a greater angle than required and the work piece springs back to the required angle. Spring back for low –carbon and soft non ferrous material is from 0 to 2^0. For 0.40 to 0.50 carbon steel and half hard materials spring back may vary from 3 to 5^0. Spring back may be as high as 10 to 15^0 in the harder materials. These figures are only used as approximations because of other variables that influence spring back. The practical way to determine the necessary amount of over bend is trial and error method. In recent years the Finite Element Analysis is considered as an effective tool for the prediction of the spring back.[1]

II.Principle of spring back

The elastic stresses remaining in the bend area after bending pressure is released will cause a slight decrease in the bend angle. Metal movement in this type is known as spring back, as shown in figure 1. The magnitude of the movement will vary according to the material type, thickness and hardness. A larger bend radius will also cause grater spring back. [3] Commercially available finite element analysis (FEA) software is used to analyze bending and spring back of different aluminum materials of different thickness.

For forming process the material is stressed beyond elastic limit so that the permanent deformation takes place. The material state becomes the plastic deformation zone; hence the sheet metal can be formed. Figure 1 shows the principle of spring back.
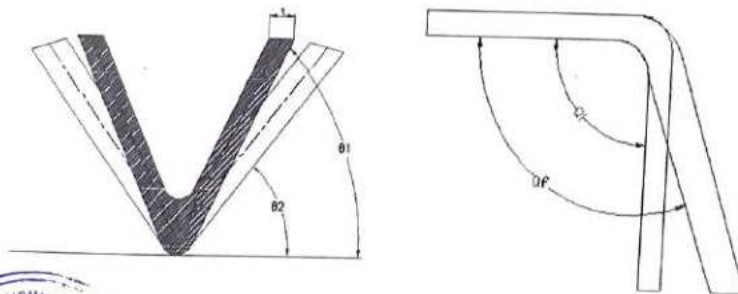

Figure 1. Principle of Spring back $\theta 1 > \theta 2$ or ($Q f > Q i$)

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Comparative Study of Routing Techniques in Wireless Sensor Network

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Abstract

A Wireless Sensor Network is made up of small sensor nodes. These nodes are deployed in monitoring area. All nodes collect necessary data and route this data to centre server. A WSN should have self-organizing capability, as nodes positions are not determined in advance. Important factor in WSN is co-operation between nodes. Depending on WSN architecture and application, routing between nodes can vary. This paper presents a comparative study of different routing protocols/algorithm in WSN. Depending on network organization, WSN routing algorithms gets divided into 3 types, i.e. location based, hierarchical and flat. These routing algorithms can be divided further into sub types, depending on how an algorithm/protocol operates. This paper presents advantages and limitations of each routing algorithm.

Keywords: WSN, routing algorithm, WSN energy limitation.

1. Introduction

In today's era, Wireless Sensor Network is used in many applications. Both industry and academia is giving tremendous attention to this technology. Lots of research is happening in this field. A WSN is made up of lots of small sensor nodes. These nodes have different capabilities like sensing, communication with other node and computing the data. The communication capability of these nodes have limitation of communication distance, they communicate through wireless medium [2]. By using wireless communication, nodes sends data to other node, performs computing to accomplish its operation or task. For example, WSN used for military surveillance, industrial process control and environment monitoring. Figure 1 shows all components of sensor node. Power unit in sensor node component is nothing but battery which has limited energy. It has processing unit which is required to process sense data. Sensing unit is tiny sensor which is used to sense data depending on application of WSN. Transceiver is used to receive and transfer data to different neighbour nodes using wireless communication. ADC is used to convert sense data from analog to digital form. BS is nothing but the base station which connects the WSN to external world through internet.

Due to size, sensor node has some limitations, but to achieve required operation, entire networks power is sufficient. Depending on application, sensor nodes deployment can be done in an ad hoc way without proper planning. After deployment, it is expected that node will organize itself into a WSN and perform its operation [1]. All sensor nodes have battery which limited in power. In some scenarios it is very difficult to recharge sensor nodes.

A WSN have dense level of nodes deployment, with power, memory and computation constrains. These constraints present challenges for WSN application. Due to these constraints, it's necessary to have some sort of protocols in WSN such as network security, node localization and synchronization. So, different routing protocols came up to handle these constraints. Because of energy limitation problem, some routing protocols have shortcoming when used in WSN. For example, routing protocol flooding. In this protocol, sensor node receives packet from other nodes and broadcasts it. This packet broadcasting process is repeated till packet is reached to its destination. As every node is broadcasting every packet, energy problem is not taken into consideration [3]. Also, nodes can receive duplicate packets and thus is possibility of implosion. Due to this, this protocol cannot be used in WSN. To overcome problems in flooding algorithm, new technique gossiping was developed. In gossiping technique, instead of broadcasting a packet, node sends packets randomly to one of other node in neighbours. This technique solves the problem of implosion but there is delay in reaching packet to its destination node.

A lot of research is happening in this area to handle or overcome these WSN constraints effectively. This paper discusses different routing protocols and compares those protocols. This papers section 2 discusses different WSN routing algorithm/protocols. In Section 3, different routing protocols are compared. At last, Section-4 concludes the paper.

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Performance Scaling of Wireless Sensor Network by Using Enhanced OMRA Routing Algorithm

Tanaji Dhaigude, Latha Parthiban and Avinash Kokare

Abstract In modern scenario it has become inherent to employ of Wireless Sensor Networks (WSN) for government and other sectors including defense. Sensor networks can be employ in society, industries, military areas, roads, forests, etc. In a traditional networks it becomes complicated to employ denser node deployment and other problems, e.g., node failure, energy consumption and asymmetric are also prominent. Sensor nodes usually works on battery-powered source and these nodes do not operate for longer time without any manual intervention and it is a very tedious and time-consuming task in forest and defense areas. Hence, it becomes a necessity to reduce energy consumption of sensor, it will also increase energy lifetime. Traditional algorithms like Radio Aware (RA), Distance Source Routing (DSR) and Directed Diffusion (DD) do not solve problems like network connectivity and asymmetric links. To overcome this problem Optimized Mobile Radio Aware (OMRA) technique is demonstrated in this paper.

Keywords Wireless sensor networks · Directed diffusion (DD) · OMRA

1 Introduction

Wireless sensor networks have wide applications in society, industries, military areas, roads, forests, etc. A WSN network is nothing but huge number of small sensor nodes (e.g., heat/humidity sensor) which has different capabilities like sensing capacity, data processing, and communication. These capabilities are necessary for some applications like military applications, monitoring and fire detection. One of the problems

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ions (Networks) > Routing Protocols

ism for energy consumption routing
s for WSN using RSES

T. Anandrao

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problem in wireless sensor network to achieve an energy
outing protocol. Energy consumption is a critical problem in
sensor network for nodes and network life. For increasing lifetime
ks energy saving is must and also energy saving routing protocols
mportant in wireless sensor networks. Here the radius more is

PERFORMANCE IMPROVEMENT OF DSR PROTOCOL BY CONTROLLING OVERHEAD IN MANET

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ABSTRACT

Ad Hoc networks usually consist of mobile nodes, which are characterized by lower computing and energy resources. For real-time streaming applications, choosing the shortest path for these kinds of sessions is insufficient. Such networks must operate energy-efficiently to maximize the lifetime of mobile devices and applications. In this paper we develop an energy-ware and delay-aware routing approach for mobile ad hoc network (MANET).

Dynamic Source Routing (DSR) protocol is a reactive source routing protocol designed specifically for mobile ad hoc networks (MANETs). In DSR protocol the network traffic is increased due to the source routing technique used for routing. In large networks intermediate nodes increases due to many source destination pairs generated, which further increases the routing overhead and energy consumption of a network in DSR. In order to improve the network scalability of DSR protocol, in this paper modifications are proposed known as HR-DSR i.e. Header Reduction DSR protocol to reduce the increased routing overhead length, due to longer routes of source-destination pairs by limiting hop count of a route. Thus modification will effect to reduce energy consumption due to routing overhead.

Keywords: MANET, DSR, HR-DSR.

1. INTRODUCTION

A mobile ad-hoc network (MANET) is a wireless self-configuring network of mobile devices which dynamically exchange information without utilizing any fixed network infrastructure. Mobile ad hoc network must be able to detect the presence of other devices in a network and

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ernet Architecture > Computer Science > Computer Communications (Networks) > Routing

omra algorithm for energy efficient

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USES OF SPENT WASH TO IMPROVE SOIL PROPERTIES FOR ROAD CONSTRUCTION

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ABSTRACT

Road transport plays vital role in development of country. Developing a good network of road in villages in India is a challenging problem as it needs stabilization of sub grade and sub base with economical option. Spent wash is distillery waste product of sugar industry and harmful if not properly treated and dispersed in water. The present study deals with the study of effect of mixing spent wash in water on index properties of black cotton soil. It can be economical and environmental friendly replacement option to water with improvement in index properties of black cotton soil.

Keywords: black cotton soil, index properties, road construction, spent wash

1. INTRODUCTION

Roads are the backbone of any country for its development. Roads play a vital role of transportation system for goods and people. Various factors effect on the selection of type of road pavement- flexible pavement or rigid pavement. The quality of subsoil layers is an influencing factor for the life of road. Hence proper material selection for subsoil layers needs to be done. For better road construction it has become expensive to remove inferior soils and replace them with foreign soil. Hence, it becomes essential to modify the properties of locally available soil for the construction of roads so as to minimize the cost of construction of roads. In view of this, best utilization of various industrial by-products is done in this regard. In this study it is intended to study various properties of spent wash for improving the soil properties for the construction of roads.

SEVEN QUALITY TOOLS A REVIEW

Akshay Jaware[1], Komal Bhandare[2], Gaurav Sonawane[3], Shraddha Bhagat[4]

[1,2,3,4] *Student of BE Mechanical, D. Y. Patil College of Engineering, Pune, Maharashtra, India*

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Abstract – *Nowadays completion is very high in improving productivity for every company. This can be achieved by using seven quality tools. The application of these tools is very easy and large amount of problems can be solved. These quality products satisfy customers need improve its productivity. This study is about having an overall view of seven quality tools and its application.*

Key Words: Flow Chart, Pareto Chart, Scatter Diagram, Histogram, Cause & Effect Diagram, Control Charts, Check Sheets

1. INTRODUCTION

The quality tools are developed in japan by quality gurus as Deming and Juran after Second World War. According to Kaoru Ishikawa 95% of problems can be solved by using seven quality tools. These tools can be used from product development to marketing [1].

The seven quality tools are

1) Flow Chart

2) Check Sheets

3) Pareto Chart

4) Histogram

5) Cause and effect diagram

6) Scatter diagram

7) Control Chart

2. SEVEN QUALITY TOOLS

Any improvement in product can be done by understanding quality improvement process in industry. This improvement can be achieved by implementing seven quality tools. These tools are very easy to understand and step by step process implementation leads to better results. Seven quality tools make process analysis less complicated for average industry worker [2].

Flow Chart

Flow chart is one of the basic tool used to study whole process. It shows whole process in step wise manner. Flow chart of whole process from material to product is studied. Graphical representation of the data makes it more simple and easy to understand [3].
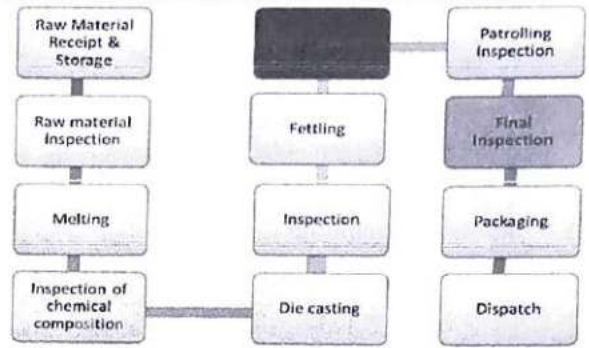

Fig -1: Flow chart

Check Sheets

Data collection is very important part for analysis purpose. The data is available in different forms depending upon application. Some example of check sheets are maintenance record, attendance record, production log books, defects record, Failure records, etc [1].

Pareto Chart

A Pareto diagram, named after Vilfredo Pareto, an Italian economist, is a special type of bar graph that can be used to show the relative frequency of different events such as defects, repairs, claims, failures, or any other entity, in the descending order. This helps to focus on major defect rather than too many small defects, to improve the quality [4].

Pareto chart is used in statistical process control for quality improvement. After collecting data is necessary to arrange it in a proper way to focus on most important factor which is responsible for 80% rejection of product in manufacturing industry. Pareto principle is also known as 80/20 rule.
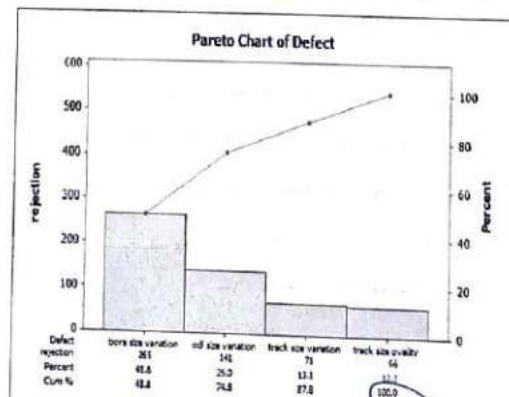

Fig -2: Pareto diagram

REDUCTION OF MACHINING REJECTION OF SHIFT FORK BY USING SEVEN QUALITY TOOLS

Akshay Jaware[1], Komal Bhandare[2], Gaurav Sonawane[3], Shraddha Bhagat[4], Rahul Ralebhat[5]

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[5]Professor, D. Y. Patil College Of Engineering, Pune, Maharashtra, India [5]

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Abstract - *In order to survive in a competitive market, improving quality and productivity of product or process is a must for any company. This study is about to apply the 7QC tools in the production processing line and on final product in order to reduce defects by identifying where the highest waste is occur at and to give suggestion for improvement. The approach used in this study is direct observation, thorough examination of production process lines, brain storming session, fishbone diagram, and information has been collected from potential customers and company's workers through interview and questionnaire, Pareto chart/analysis, histogram and control chart was constructed. This paper intends to exhibit the exact application of seven quality tools in fork industry.*

Key Words: Flow Chart, Pareto Chart, Scatter Diagram, Histogram, Cause & Effect Diagram, PP & P_{pk} , Why - Why Analysis, Hypothesis Test

1. INTRODUCTION

In today's world, business has become more and more competitive. All industries and organizations have to perform well in order to survive and be profitable. "Quality" means those features of products which meet customer needs and thereby provide customer satisfaction. In this sense, the meaning of quality is oriented to income. The purpose of such higher quality is to provide greater customer satisfaction and, one hopes, to increase income. However, providing more and/or better quality features usually requires an investment and hence usually involves increases in costs. Higher quality in this sense usually "costs more." One of the strongest motivating forces is "Delighted Customer". Industries believe that prosperity is directly linked with prosperity of customers. Mutual trust, healthy relationship, ethical values, innovative technologies, quality products and services are the constituents of commitment towards the customers. If defects are in large number it not only does an organization waste its resources and time to re-manufacture the products, but it also contributes to the loss of customers' satisfaction and trust. Customer satisfaction comes from those features which induce customers to buy the product. Dissatisfaction has its origin in deficiencies and is why customers complain. Some products give little or no dissatisfaction; they do what the producer said they would do. Yet they are not saleable because some competing product has features that provide greater customer satisfaction. So it is important to reduce defects and maintain quality of product. Quality of the product is achieved by minimization of rework, reducing scrap rate and minimizing

man hour on rework. Now a day's rework of rejected parts are common but rework add losses to the company net profit, if the company is a continuous mass production where the products go through a series of process to come out with final product. The Seven Quality Control Tools popularly called the 7 QC Tools, According to kaoru Ishikawa more than 95% company problems can be solved using these tools. It comprise of graphical methods and help to transform the data into easily understandable diagrams or charts. This further helps to understand the situation or to analyze the problem easily and leads to developing solutions which aim towards quality improvement. Further, these charts and diagrams help to highlight the important aspects of a problem clearly so that the concerned persons can focus attention on them and start developing the solution. Pareto analysis helps to identify and classify the defect according to percentage significant. Cause and effect diagram is a useful tool in identifying the major causes. This diagram helps to build a relationship. Brainstorming is done with utilizing these quality tools to provide an effective solution. Thus quality management tools are effective and significant in reducing the rework and rejection rate.

2. PROBLEM STATEMENT

The rejection of shift fork 3rd 4th (S101) is very high due to machining defect of 30.8 dim not ok. Due to this variation in dimensions it cannot assembled in gearbox. About 313 no's job are rejected monthly at final inspection stage. So we lose productivity & face shortage in supply to customer.

Required size - 30.8 mm (variation +/- 0.12 mm is acceptable)
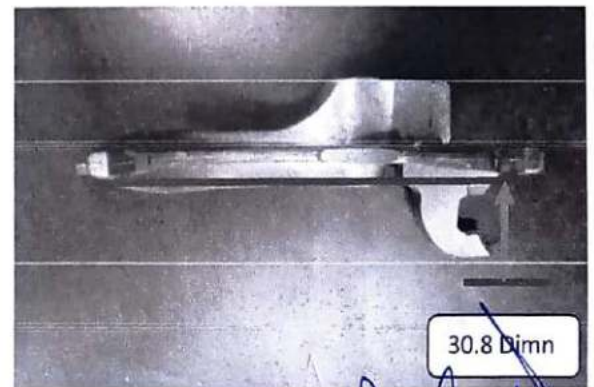Maximum reading - 30.92 mm
Minimum reading - 30.68 mm

30.8 Dimn

Fig -1: Defective Part

HOME   ABOUT   LOGIN   REGISTER   SEARCH   CURRENT   ARCHIVES

DWT-Differential Analysis Optimization technique Used in the protection of Microgrid

Pooja Khandare, Sanjay Deokar, Arati Dixit

Abstract

This paper proces DWT-differential analysis for optimal relay coordination issue for the microgrid. This solution works for grid-connected as well as the disconnected mode of operation. Coordination among relays of the microgrid is a complex part to handle, as the insertion of DG causes a bidirectional flow of current. Advanced protection methods involving DWT analysis of fault current can provide intelligent and smart ways of protection. Previous work has been applied with the differential algorithm on grid-connected and islanded mode, but one major deficiency is an increase in operating time of primary and secondary relay, which further decreases the reliability of Microgrid. The proposed system relies on DWT-differential Analysis based approach, which removes all unwanted noise and bandwidth from fault signal and differential analysis helps to select the best pair of a relay. The problem is formulated as a Non-linear programming constraint to minimize overall operating Relay time. The Scheme is tested with IEEE-9 bus system. The comparative analysis is carried out with two traditional methods; the result shows that it achieves a remarkable reduction in operating time in the primary and backup relay.

Keywords

Differential Analysis; Microgrid Protection; Relay coordination

Full Text:

PDF

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Differential Algorithm Based Intelligent Protection Scheme for Microgrid

Pooja Khandare, S.A.Deokar, A.M.Dixit

Abstract: Proposed scheme presents intelligent technique in protection of microgrid. This paper gives new approach in feature extraction of faulted current signal using Discrete Wavelet Transform. Furthermore different parameters like TMS(Time Measurment setting),PSM (Plug setting Multiple) and CTD (coordination time Duration) are computed from featured faulty current. This course of action used to build genetic differential algorithm for deciding best suitable pair of relay with concept of "survival of fittest". IEEE 9 bus system is considered for studding different types of faults for utility-connected and islanded mode. Initially primary pair of relay is activated and secondary protection operates on failure of primary. This study gives effective solution for fast operation of pair of relay in optimized time.

Keywords: Protection; Relay coordination; Micro grid; fault detection; DiscreteWavelet Transform (DWT)

I. INTRODUCTION

Fossils fuels are vanishing day by day hence need of micro grid is increasing. Penetration of renewable energy sources and Distributed generators (DGs) in grid reduces greenhouse effect and give solution to high energy demand and depletion of artificial sources[1-4]. Micro grid gives quality of supply to all types of load commercial as well as household in rural and urban areas [4].In remote areas where electricity is not reached because of natural calamities and atmosphere micro grid is best solution. Micro grid System works for both mode of operation grid connected as well as islanded mode [5].[6] gives digital protection scheme for micro grid using wavelet transform which does not consider Grid connected and islanded mode of operation. Author in [8] gives Time-frequency transform-based differential schemefor micro grid protectionstudied both modes and HIF but feature extraction take place with help of differential energy and Threshold which results in increase in tripping time of relay. [10]

An adaptive overcurrent protection scheme based on the synchronous phase measurement is proposed for different operation modes in microgrid but not studied for moth operating modes. [14]fuzzy and neuro based optimization techniques used to create problem for relay coordination predefined for various issued therefore if new issue obtained with system ,coordination fails[3]-[4]

microgrid provides feasible solution for forthcoming problems like greenhouseeffect , growing energy demand, and the depletion of conventional fossil fuel energy sources.Many researchers give different techniques in feature extraction of fault current in microgrid.Author [1] suggest protection scheme which utilizes the principles of synchronized phasor measurements and microprocessor relays to detect all types of fault conditions in case of both modes of operation but as communication is included which results in increases in cost. [2] Gives sequence component based feature extraction protection but the robustness and reliability of the proposed schemes need to improve.Curve fitting is one method in which inverse time operating relation are obtained on graph for many faults. Linear and nonlinear characteristics are tested for relay coordination with different operating curves [5]but accuracy of this method is very poor. Non Linear optimization techniques [16][17] in which problem is formulated using nonlinear programming. Both TDS and PSM are selected efficiently; minima trap can be obtained in this method. Hybrid optimization method which is combination of Analytical and optimization method capable of solving relay coordination problem for big interconnected system but worked with fixed topology[15]-[18].There is need to discover intelligent scheme for microgrid protection with optimization techniques.

II. SYSTEM DESCRIPTION

IEEE-9 bus system is converted to hybrid microgrid by connecting two solar one wind and one diesel generator set. Normal grid is fed with two feeder 115kV, X/R ratio=6,MVA=500MVA.The line impedance is 0.529+j0.1406 Ω/km ,all lines are 500m long. Transformer connected to point of coupling is with rating 20 MVA, 115kV/12.47kV.Ratings of DG are 480V, 20 MVA, xd'=0.11 with transformer rating 20 MVA, 12.47kV/480V.load capacity is given by 2 MVA, 0.9 system is shown in fig.1

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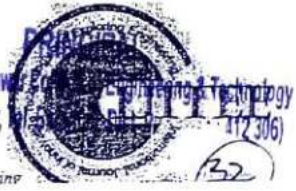
Real time control and monitoring of grid power systems using cloud computing

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Article Info

ABSTRACT

The use of grid power systems based on the combinations of various electrical networks, information technology, and communication layers called as Smart Grid systems. The technique of smart grid suppressed the problems faced by conventional grid systems such as inefficient energy management, improper control actions, grid faults, human errors, etc. The recent research on smart grid provides the approach for the real-time control and monitoring of grid power systems based on bidirectional communications. However, the smart grid is yet to improve regarding efficiency, energy management, reliability, and cost-effectiveness by considering its real-time implementation. In this paper, we present the real-time design of efficient monitoring and control of grid power system using the remote cloud server. We utilized the remote cloud server to fetch, monitor and control the real-time power system data to improve the universal control and response time. The proper hardware panel designed and fabricated to establish the connection with the grid as well as remote cloud users. The authenticated cloud users are provisioned to access and control the grid power system from anywhere securely. For the user authentication, we proposed the novel approach to secure the complete smart grid system. Finally, we demonstrated the effectiveness of real-time monitoring and control of the grid power method with the use of structure of practical framework.

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1. INTRODUCTION

Nowadays, there is significant research and development is carried out on the smart grid with the aim of improving the effective energy management, efficient power control and monitoring. The smart grid is known as various networks of electrical, communication systems as well as Information & the Technology of Communication (ICT) standards. The smart grid provides the power control more effective, reliable and efficient monitoring using the emerging advancement in ICT [1]. The smart grid helps to monitor the use of power and match the power consumption with the system load. The remotely controlled smart grid delivered the self-monitoring, bidirectional communications, self-controlling, and self-healing communication for transmission, production of energy, control of energy, distribution of energy, and power observation to balance the demand and supply [2]. As compared to traditional grid systems, it is required to manage the number of smart grid in reliable, efficient, scalable and secure approach. The smart grid system should extend their communication networks and control all the data over the remote distributed data storage. Therefore, to improve the smart grid system performance, recently the number of studies reported the elements of cloud computing into the smart grid. The cloud computing is emerging technology to remotely

A survey on Energy Efficient Routing Protocols

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Abstract— Energy efficient routing protocols have gained large importance from researchers and industries as well. Energy efficient routing protocols possesses very high potential and it can be applied to numerous applications including military areas. In general, wireless sensor network is made up of large number of sensor nodes. The sensor nodes used here are capable of processing the data, sensing and adequate capabilities for communication. If we can save the energy dissipated by routing protocols, we can increase the lifetime of the sensor node. In this paper a brief review of popular energy efficient protocol is being done. The aim of this research paper is to provide base for further research in this area.

Keywords— Wireless Sensor Network (WSNs), protocol, routing.

I. INTRODUCTION

Today's world is more focused on energy, energy efficient wireless networks are also playing important role and many researchers are working on energy efficient routing protocol.[1] The aim of this paper is to summarize various routing protocols. The most important advantage by saving energy is that the lifetime of the nodes can be increased.[2] Energy efficient routing protocols provide solution to various problems that arises in wireless sensor networks and few problems can be given separate attention[3]. On demand routing protocols are more focused due to this than various proactive routing protocols available. Two mostly commonly used energy efficient techniques are sensible to flooding and route discovery in case of reactive type of protocols. Another way for achieving energy efficiency is route selection, node energy and battery level [4]. There are two ways for being energy efficiency first one is lesser power consumption and other one is increasing the availability time of the network[5].

II. SURVEY ON ENERGY EFFICIENT ROUTING PROTOCOLS

A. An Energy-Efficient MAC Protocol:

Wei Ye et.al. discussed on medium access control(MAC) for wireless senor networks. Wireless networks sensor nodes are powered by battery. All the sensor nodes are designed in such a way that communication is possible amongst them, many times all this nodes worked together for one task deployed to them e.g. environmental monitoring. The entire sensor nodes are deployed in adhoc fashion, individual nodes remains inactive for very long time, they are capable of becoming active immediately when they sense something. The characteristics and applications of the sensor networks are different than traditionally accepted MAC given by IEEE in many ways.[6] The two major are considered while designing MAC in this paper are energy conservation and self configuration. In this paper proposed S-MAC for three unique methods to control energy used and also supports self configuration. As in PAMAS technique, proposed technique also uses a radio to sleep while transmitting the data. For reducing the contention latency of the sensor network application, S-MAC uses message passing technique.

Fig.1.Periodic listen and sleep

The major aim of developing new technique is to reduce the energy consumption without compromising on scalability and collision avoidance. The technique developed tries to reduce

Modeling and Simulation Capacity Analysis of MIMO Wireless Sensor Network

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Abstract

In conventional wireless conversation device the problematic of approximating the parameters such as coherence time, coherence band width and so on. Continues to be not correct. This problematic is especially owing to the circumstance that the mobile receiver may be in movement and additionally obtained signals can attain alongside a couple of pondered paths. In this paintings, the channel modeling, most efficient location scatterers and reflectors with appreciate to the region of receiver and transmitter and the surest valve of pointed range with the course of movement of the cell receiver are to be travelled. The consequence of the multipath fading both over the years and frequency is also to be careful. The algorithms and arrangements projected in this articles shall gain within the (i) choicest location of scatterers everywhere a receiver transferring at an adjustable velocity (ii) practical modeling of MIMO declining channels overwhelming the conventional assumption that fading coefficients among exclusive transmit and get hold of antennas are unbiased unsystematic variables.

Keywords : Mobility models, Multipath fading, Channel uncertainty, MIMO fading channel

I. Introduction

Typically, the channel tap gains vary in time and the different dynamics operate at different time-scales. The usual supposition that message proceeds residence on a bandwidth 'W' around a carter frequency fc (fc>>W) need not hold good for Ultra-Wideband (UWB) communication systems [I] [II]. The typical transmitter band width is from 3.1 GHz to 10.6 GHz for UWB (as regulated by FCC)[III]. In this paper, it is proposed to determine the fastest time-scale rate of dissimilarity of the channel tap gains.

Design and Analysis of Single Phase Modified Quasi-Z-Source Cascaded Hybrid Three Level Inverter

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Abstract - *This paper proposes combination of a novel single-stage quasi cascaded H-bridge three-level boost inverter. It proposes the combination of a novel modified quasi-Z-source (MqZS) inverter with a single- phase symmetrical hybrid three-level inverter in order to boost the inverter three-level output voltage. The proposed quasi cascaded h-bridge three-level boost inverter has the advantages over the cascaded H- bridge quasi-Z-source inverter in cutting down passive components. The single-phase MqZS hybrid inverter provides a higher boost ability and reduces the number of inductors in the source impedance, compared with both the single-phase three-level neural-point clamped (NPC) MqZSI and the single-phase quasi-Z source cascaded multilevel inverter (CMI). The performances of both the proposed MqZS-CHI and the modulation techniques are verified through simulation and experimental results. Simulation and experimental results are presented to demonstrate the expected representations. Consequently, size, cost, and weight of the proposed inverter are reduced. A capacitor with low voltage rating is added to the proposed topology to remove an offset voltage of the output AC voltage when the input voltages of two modules are unbalanced.*

Key Words: **cascaded, clamped, H-bridge, hybrid, inverter, modulation, quasi.**

1.INTRODUCTION

Traditional voltage source inverters (VSIs), the obtainable ac output voltage is limited to less than the dc input voltage, and thus an additional stage, consisting of a dc-dc boost converter, is required to obtain the desired ac output voltage. The additional dc-dc boost converter increases the cost and decreases the efficiency of the overall power converter. In order to overcome the limitations of traditional VSIs, both the Z-source inverter (ZSI) and the quasi ZSI (qZSI), in which the traditional dc-link is replaced with the Z-source impedance network, have been developed [1]-[5]. The ZSI/qZSI can boost the dc-link voltage by using the shoot-through state of the inverter bridge with a single power conversion stage. Therefore, it can reduce the component count and enhance the reliability. However, because the shoot-through state can only be regulated within a zero state, the practical boost factor of the qZSI/ZSI is usually restricted. This may limit further applications of the qZSI/ZSI in some areas that require high voltage gain for low-voltage energy sources, such as fuel-cell stacks and batteries.

Multilevel inverters are suited for high-voltage and high-power applications because they are designed to naturally share the total dc voltage between cascaded power semiconductors. By increasing the number of inverter voltage levels, it becomes possible to achieve high- voltage and low-distortion ac waveforms, as well as reduce the blocking voltage requirement of individual switching devices.

The integration techniques of the Z-source energy conversion concept applied to various multilevel inverters have been introduced to combine the advantages of both the Z-source inverter and the multilevel inverter. A dual Z- source inverter with reduced common-mode switching and voltage buck-boost capability has been designed. However, an ac output transformer connected to dual-bridge ac outputs of dual ZSI is required to provide a five-level ac output voltage. The three-level Z-source neural-point clamped (NPC) inverter and dc-link cascaded inverter are implemented by using a single impedance network and a single dc source. They can reduce the system cost due to the lower numbers of Z-source impedance networks and dc sources. However, their boost ability is limited, as with the classic ZSI. In, the operation analysis and modulation techniques based on the phase disposition (PD) scheme of the three-level NPC ZSI are presented to achieve voltage boosting, better output voltage quality, and the minimal commutation count. Because those are accomplished by adding the triple offset and shoot-through time to the sinusoidal references, its implementation is quite complex. The closed-loop control of both the capacitor voltage and the load current for a three-level NPC ZSI is discussed in [15] in order to obtain the desired dynamic response. The operation and modulation techniques for controlling the five-level NPC Z-source inverter, combining the two Z-source impedance networks with a separate dc source and the

Hybrid Electric Vehicle Fault Diagnosis and Detection Technique

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Abstract- This paper describes the fault diagnosis and detection methodology for electric vehicle, and its fault severity criteria studied together. Detailed fault studied for transmission, PMSM motor, driveline, and thermal management system. The possible fault of the various subsystems, which influence the vehicle performance & range are listed together to differentiate faulty and Health mode. The proposed fault technique is conventional might be useful to different types of vehicles and faults. With twenty years of electric car design experience, manufacturer are able to manage different fault, defined through well FMEA, PFMEA, and fault study. This helps to expand the business and improve reliability, which promotes the use of electric vehicle powertrain.

Key words: Hybrid electric vehicle [HEV], Fault management, fault diagnosis, fault classification, fault detection, steering, controllability, stability, vehicle dynamics.

I. INTRODUCTION

Diagnosis of vehicle need completes definition, which requires study the all occurring faults and correlating with current faults. The vehicle's maintenance mechanic knows the well mechanism and could understand the upcoming major issue with the vehicle powertrain fault cause. In same manner before diagnosis every component functionality knowledge is also important.so mechanic requires a tool such as CRO, electric measurement instrument that measures the vehicle's health condition and checks for availability of spare or another prognosis measurement.

II. VEHICLE DYNAMICS

Vehicle lateral acceleration, longitudinal velocity, rolling resistance, steering angle, yaw rate are the important parameter which provides best driving comfort.
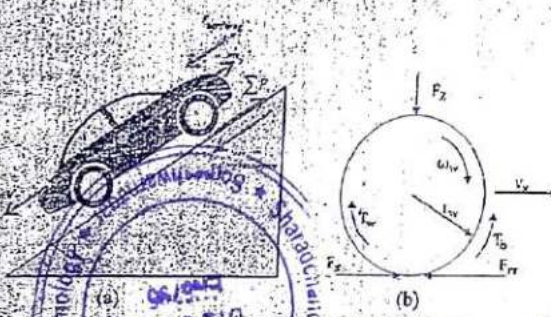

(a)   (b)
Image of vehicle different acting forces

V = velocity of car
r = vehicle tire radius
ω = angular speed of car

$$V = r * \omega \ldots\ldots\ldots\ldots 2.1$$

$$F = ma \ldots\ldots 2.2$$
$$f = m * g * Sin\emptyset \ldots\ldots\ldots\ldots\ldots 2.3$$
$$faero = 0.5 * \rho_{air} * Af * C\_d * V^2 \ldots 2.4$$

m = mass of the vehicle
A= vehicle acceleration
ρ_{air} = Air density,
Af = Frontal surface area of the vehicle,
Cd = Aerodynamic drag coefficient,
V = Vehicle speed,
$\emptyset$ = Surface road angle with horizontal road

$$Fr = F\_tire + F\_aero + F\_slope \ldots\ldots 2.5$$

F_tire= Tire force,
F_aero= Aerodynamic resistance,
F_slope= Climbing Force.

Forward Traction condition of vehicle is drive wheel torque and transmission torque both should be greater than vehicles total force and more store form of energy[1] [2].

III. PARALLEL HYBRID ELECTRIC VEHICLE

In a Parallel Hybrid, there are two parallel paths to power the wheels of the vehicle: an engine path and an electrical path, as shown in the figure. The transmission couples the motor/generator and the engine, allows either, or both, to power the wheels. Control of a Parallel Hybrid is much more complex than for a Series Hybrid because of the need to efficiently couple the motor/generator and engine in a way that maintains drive controllability and gets observable performance. [3] [5]

The Parallel Hybrid can operate in the following five modes:
A. Engine only traction
B. Electric-only traction
C. Hybrid traction
D. Regenerative Braking
E. Battery charging from the engine

Improvement of Traditional Protection System in th Hybrid Microgrid with Advanced Intelligent Metho

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ARTICLE INFO

ABSTRACT

The sustainable power sources will turn out to be arrangement over conventional existing accessible specialized difficulties are ascending in the devel Indian Microgrid protection is one of it. Tr framework utilized directional overcurrent transfe against different deficiencies. These are o presupposition of the unidirectional progression of strategy cannot matter to the microgrid security progression of current streams because of the near prompts specialized difficulties in the Microgrid intelligent method of DWT differential Algorit traditional protection system. The various paramete setting) TS (time setting) CDS(current duration se time of relay tested Indian Microgrid concent analysis, and smart system of microgrid protection all challenges got from writing contemplated. The s MATLAB software. Double line to ground fault is s locations and DWT-DA is applied The percentage c in operating time and other parameters are r reliability of microgrid.

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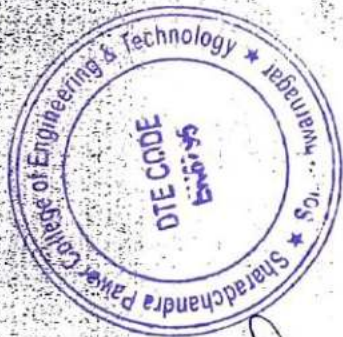
1. Introduction

Research article

Relay Coordination and Optimization techniques using DWT-Differentiation Algorithms for Fault Detection in Microgrid

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Abstract: The microgrid is assuming an indispensable role in the power area and greatly affects inexhaustible reconciliation. There are numerous specialized troubles to move so as to utilize high ability in the microgrid. The significant issue in the microgrid has its protection challenges as the bidirectional progression of current moves through transports. This paper proposes novel Discrete Wavelet Transform-Differential Algorithm Techniques, which help to secure Distributed Generations and other costly electronic parts from the defective condition. The occurrence of any shortcoming on the microgrid causes alters in amplitude and course, which prompts a hamper on the surviving protection framework. In the proposed scheme, short circuit current is pre-processed through discrete wavelet transform (DWT) transform to remove all noise and high pass and low pass content in the signal and undergoes state-of-art of adaptive protection for selection of relay. This algorithm implements on the Standard IEEE 9 bus system in MATLAB environment and with a single line to ground fault at 8 locations tested with pair of 21 relays for primary and backup protection in the grid-connected and separated mode of operation. The traditional methods compared with the proposed method in terms of Different parameters like PS (plug setting), TDS (time dial span), CTD (coordination time duration), Top (operating time of relay). To prove the better implementation of results, one real-time system as a case study selected with the hybrid microgrid.

Keywords: microgrid protection; relay coordination; optimization; differential algorithm; DWT; distributed energy resources

Study of Effect of BHF on Springback-FEA Approach

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Abstract
Sheet metal forming processes are widely used by automobile industry for forming of the components of vehicle body. When the sheet is formed by die punch setup and the punch is retracted, the formed components springback due to elastic stresses remaining in the bent up part. These elastic stresses try to relieve and in doing so there is a metal movement called springback. The desired size and shape is not obtained because of springback.

The springback is a complex phenomenon and is affected by many process and material parameters. In this paper the effect of processes parameters such as blank holder force and percentage thinning due to increase in BHF is investigated by using FEA.

***Keywords-** Sheet metal forming; Springback; FEA; BHF; Percentage thinning.*

I. INTRODUCTION

Bending is a very widely used process in forming of the parts. Precision of the formed parts is affected by the elastic recovery during unloading. Due to the elastic recovery, final shape of the component is not as desired. This change in shape due to elastic stresses is called springback. Correct prediction of springback is therefore very important as it helps in the design of punch and die. Also it helps to obtain the desired shapes with accuracy. Measuring the springback by experimental process is costly and time consuming. In the recent years finite element softwares are very widely used for the prediction of the springback.

Jean-Philippe Ponthot et al. [1] investigated the influence of various parameters on springback by commercial code OPTRIS. S. K. Panthi et al. [2] studied the effect of load on springback, varying the thickness as well the radius of the die. M. Balshi-jooybari et al. [3] studied the effect of significant parameters including sheet thickness, sheet anisotropy and punch tip radius on springback in V-die and U-die bending processes. Gawade Sharad et al.

[4] investigated the effect of sheet thickness on springback and the FEA results are compared with experimental for U bending. Wenjuan Liu et al. [5] investigated the springback of the typical U shape bending, by using neural network and genetic algorithm, based on production experiment.

Aysun Egrisogut Tiryaki et al. [6] investigated springback of wipe bending process based on results obtained from FEA and prediction model of springback was developed by neural network. Ozgur Tekaslan et al. [7] studied the effect of different parameters on springback of stainless steel sheet metal in V bending dies. W. L. Xu [8] studied the effect of number of integration points, blank mesh size, and punch velocity on springback.

In this paper the effect of processes parameters such as blank holder force and percentage thinning due to increase in BHF is investigated by using FEA commercial code Hyperfom with radioss solver. The blank holder force is used to control the springback of formed components.

Effect of sheet thickness and R/t ratio on Springback in sheet metal forming

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Abstract

The forming process is the process in which the sheet is formed into desired shape. Sheet metal forming processes are very widely used by automotive industry, home utensil manufacturing industry etc. One of the problems associated with the sheet metal forming process is the springback. Springback is a complex phenomenon as it depends on many process parameters such as die radius, tooling geometry etc. and material properties such as sheet thickness, strength coefficient, strain hardening exponent etc. In this paper the effect of sheet thickness and R/t ration on springback is studied for the material IS513D both by the experimental and FEA method and their results are compared.

Keywords- Sheet thickness; R/t ratio, Springback; forming.

I. Introduction

Sheet metal bending processes are very widely used by automobile industries for forming of the components used in making of vehicle body and door panels. Also these processes are used in aircraft industry, home appliance industry, food industry and in construction of furniture panels, drums of various diameters, panels for electronic components, large spherical vessels and cylindrical vessels etc. Bending process is one in which a planer sheet is plastically deformed into curve one. When component is bent, it tries to regain its shape and therefore the desired shape of the component is not obtained. It affects precision of the component and hence the precision of the formed part is a major problem in bending of sheet metals. All bending processes are subjected to more or less amount of springback because of elastic recovery during unloading.

In the past many researchers have worked so as to investigate springback and also to study the various parameters affecting springback and to reduce it. In this paper the literature review of the process parameters and material parameters such as sheet thickness, R/t ratio, on the springback is studied.

S. K. Panthi et al. [1] modeled sheet metal bending process for large deformation based on total elastic incremental plastic strain. Use of software capable to handle large deformation an elasto-plastic analysis for sheet metal bending process is done to predict the springback. This study was carried out so as to observe the effect of some geometric parameters like die radius, thickness of sheet, sector angle etc. and mechanical material properties such as yield stress, Young's modulus, strain-hardening exponent and lubrication condition on the springback. It is found that with increase in yield stress there is increase in springback. Also as the Young's modulus increases springback is found decreasing and friction has negligible effect on springbagk. Recep Kazan et al. [2] studied the springback for the wipe-bending process.

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applied mechanics

Article

Springback Prediction in Sheet Metal Forming, Based on Finite Element Analysis and Artificial Neural Network Approach

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Abstract: Sheet metal forming is one of the most important manufacturing processes applied in many industrial sectors, with the most prevalent being the automotive and aerospace industries. The main purpose of that operation is to produce a desired formed shape blank, without any material failures, which should lie well within the acceptable tolerance limits. Springback is affected by factors such as material properties, sheet thickness, forming tools geometry, contact and friction, etc. The present paper proposes a novel neural network system for the prediction of springback in sheet metal forming processes. It is based on Bayesian regularized backpropagation networks, which have not been tested in the literature, according to the authors' best knowledge. For the creation of training examples a carefully prepared Finite Element model has been created and validated for a test case used in similar industrial studies.

Keywords: FEA; S-Rail; sheet metal forming; springback; artificial neural networks

1. Introduction

Sheet metal forming is widely used in many applications but, among others, it is mainly utilized in the automotive and aerospace industries. It is a very popular manufacturing technique due to the high precision, mass production and short processing time that can be provided in a production line. Springback is a significant phenomenon in applications where dimensional precision is a vital requirement since the final product has to conform with the predefined engineering tolerances. During the unloading of the manufactured part, the stresses of the material are redistributed, the strains change, and consequently, the final component dimensions become different than expected. Thus, the main target of Finite Element simulations is to closely investigate and minimize that issue by replacing the costly and time-consuming physical tryouts with virtual ones, and as such improve the quality of the die design manufacturing cycle. That is why Finite Element Analysis (FEA) has already been integrated into plenty of industrial applications [1,2]. However, due to the fact that elastic unloading is difficult to be calculated by experience and table checking [3], in recent years neural networks have commonly been used to map that complex and non-linear relationship [4]. Considering the already existing FEA data, Artificial Neural Network (ANN) is trained in order to make predictions regarding the elastic unloading of a studied workpiece.

Many approaches concerning sheet metal forming and springback prediction were conducted by different researchers. For example, Mulidran et al. (2018) [5] studied the springback effect on a car body stamped part, made of AA6451-T4, by using PAM-STAMP 2G. Various material models combinations were implemented in order to achieve accuracy in the springback prediction results. Kazan et al. (2009) [3] developed a springback prediction model in wipe-bending process by using the

Experimental Investigation on Development and Effect of Elevated Temperature on M-20 Geopolymer Concrete

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Abstract: Concrete is one of the most widely used construction material. The global use of cement concrete is second only to the use of water. It is mainly related to the Portland cement as the main component for making concrete. The demand for concrete as a construction material is increasing day to day. Producing one tonne of cement requires about 2 tonnes of raw materials (shale and limestone) and releases 0.87 tonne of CO2, about 3 kg of Nitrogen Oxide (NOx) and some other harmful substances also which are adversely effect on environment and ultimately on living beings. Design and experimental investigation on development of geopolymer concrete is important because increase in use of geopolymer concrete leads to reduction in use of regular cement concrete. Reduction in use of ordinary cement concrete leads to reduction in use and production of cement. Also the fly ash and ground granulated blast furnace slag is used and the problem of dumping of these materials ultimately gets solved.

In this experimental research cement is totally replaced by use of fly ash and ground granulated blast furnace slag (GGBS). These supplementary cementious materials are activated by use of Alkali Activated Solution to form a cementious paste. Effect of elevated temperature is experimentally observed for various combinations of FA and GGBS and compared with ordinary cement concrete.

From the experimental work it is observed that the geopolymer concrete with use of 40% fly ash and 60% GGBS gives 35% more strength than target strength. When geopolymer concrete and ordinary cement concrete is exposed to elevated temperature ranging from 3000 C to 7000 C in variation of 2000 C; comparatively geopolymer concrete has maximum 52% strength reduction, while on other hand ordinary cement concrete has maximum 67% strength reduction.

Keywords: Fly ash, Ground granulated blast furnace slag, Alkali activator solution, Geopolymer concrete

1. INTRODUCTION

The cement industry is having major contribution in GDP by paying India's second highest Central Excise. With infrastructure development, the demand for cement is also increase. Portland cement is the most energy consuming process after aluminum and steel, as it consumes 4GJ per tonne of energy. The Indian cement industry is the third largest user of coal in the country after thermal power plants and steel sector. The manufacturing of Portland cement is an energy intensive process and releases a large amount of greenhouse gas to the atmosphere. The climate change due to global warming, one of the greatest environmental issues has become major concern during the last decade. 'The global warming is caused by the emission of greenhouse gases, such as CO_2, to the atmosphere by human activities. CO_2 contributes to near about 67% of global warming [7].

Producing one tonne of cement requires about 2 tonnes of raw materials (shale and limestone) and releases 0.87 tonne of CO2, about 3 kg of Nitrogen Oxide (NOx) and some other harmful substances also. The global release of CO2 from all sources is estimated at 23 billion tonnes a year and the Portland cement production accounts for about 7% of total CO2 emissions. The cement industry has been making significant progress in reducing CO2 emissions through improvements in process technology and enhancements in process efficiency, but further improvements are limited because CO2 production is inherent to the basic process of calcinations of limestone. Mining of limestone has bad effect on land-use patterns, local water regimes and ambient air quality and thus remains as one of the principal reasons for the high environmental impact of the industry. Dust emissions during cement manufacturing is one of the main

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AC/DC Hybrid Electric Power Generation System for More Electric Aircraft by using Prototype Model

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Abstract—This paper declares the modeling and simulation of electric aircraft by using AC/DC hybrid electric power stage system for many electric aircraft. Compare the result of hardware & software system. There are many different voltage stock for the electrical system on ample civilian aircraft, 28 V dc that can be used on large aircraft for lower power loads, and full electrical system on small aircraft. For field aircraft, 270 V dc (135 V) is used and several sub-systems are used on few big aircraft. 115 V ac at 400 Hz big loads on large military aircraft. The demonstration of the planned topology is proved with MATLAB / Simulation model.

Keywords— Electric Airplane, Three-phase rectifier. Power Generation, more electric aircraft,

I. INTRODUCTION

In the designing and effectiveness of early large, manned aircraft, the More Electric Aircraft model provides many possible advantages. In this article, normal airplane electrical force frameworks and related burdens are eminent[1].A mixture of systems based on mechanical, hydraulic, pneumatic, and electrical sources embodies traditional aircraft architectures used by civil aircraft. The resulting traditional equipment is the culmination of system supplier stenner of growth. The disposition is to motility towards all-electric aircraft, meaning that all the aircraft's power off-takes are electric, thus eliminating the requisite for hydraulic power generation on the engine.

New electrical high-voltage system and fresh method, like AC, flank ice shelter or start-up of electric motors, are needed to eliminate bleed air outlets.[1].A significant allotment of electric energy is absorbed by regulated electric drives and mechanism in the More Electric concept. Usually, they are powered by converters Fed by a source of DC-voltage. Since the AC voltage of the power bus in any electrical machine must be corrected in a traditional aeroplane, it is usable to create a power bus based on the Direct Current voltage. In improver, resulting in material, cost and weight reductions, and To generate the DC voltage, only one large rectifier per generator is required.[2].To capitalize on the possibleness of autonomous demonstration, Pilotless Airy Transport are state designed for use in both civil and action use. The More-Electric Aircraft (MEA) idea is likely to be used by current UAV system designs to increase performance and boost the convenience and maintenance of aircraft method[3]. A mixture of systems based on mechanical, hydraulic, pneumatic, and electrical sources embodies traditional aircraft architectures used by civil aircraft. The resulting traditional facilities are the culmination of decades of history.

Production by suppliers of systems. Fuel is transformed into power by the engines in a traditional configuration (Figure 1 is a simple schematic).In order to drive the plane, much of this power is used as dynamic power. The remaining four major sources of non-propulsive control are transformed into Pneumatic energy from the high-pressure compressors of the engines.

Traditionally, this sort of force is utilized to control the ECS and WAI frameworks with hot air. Low performance and trouble in detection leaks are its disadvantages. Mechanical power that is transferred from the engines to the central hydraulic pumps (through mechanical gearboxes), to the local engine equipment pumps and other mechanically powered system, and to main generator. Hydraulic power, which is transferred from the central hydraulic pump to the first and alternate aviation activity actuation systems; to the readying, move and braking landing gear; to the actuation of the engine; and various auxiliary schemes. Hydraulic scheme have a high tightness of power and are very durable. A dense and adamant base and the possible leakage of hazardous and caustic fluids are their drawbacks. Electrical power from main generator to power lighting of aeronautics cabin and aircraft galleys and new technical loads. Electrical power requires no heavy infrastructure and is very versatile. The key disadvantages are that it has a less power tightness than liquid power conventionally, resulting in hazard of burning (in case of a SC).

II. PROPOSED MODULE

In the scheme discussed in the paper, we have to used PID control action. It Consists of Step up Transformer, Step Down Transformer, Coupling Transformer, Switching Circuit & Smoothing Circuit. We have to introduced with a single phase 230 V AC source to produce 28V DC bus.
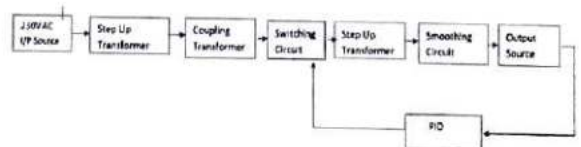

Fig. 1. Block Diagram of Projected Anatomy

Figure 1. shows that block diagram of projected anatomy. This 28V DC bus which can be used for low power loads on large aircraft. Input is given by 230 V AC input source which is given to the step up transformer. Step up transformer is 26:1 that is step down the voltage 230V-9V.The output of step down transformer which is connected to the Coupling

Research Article

Brain Tumor Detection and Tissue Classification using Machine Learning Algorithm

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Department of Computer Engineering, DGOI, FOE   Bhigwan,

Abstract

In this paper, we propose a cerebrum tumor division and classification strategy for multi-methodology attractive reverberation picture examines. The data from multi-modal brain tumor segmentation challenge are utilized which are coenrolled and skull stripped , and the histogram matching is performed with are ference volume of high contrast. We are distinguishing tumor by utilizing preprocessing , division, highlight extraction ,streamlining and finally classification after that preprocessed pictures use to order the tissue .We played out a forget about one cross-approval and accomplished 88 Dice overlap for the complete tumor area, 75 for the center tumor district and 95 for improving tumor locale, which is higher than the Dice cover detailed.

Keywords- *Machine Learning, SVM Algorithm,K-Mean , spyder, pycharm .*

Introduction

The discovery and conclusion of cerebrum tumor from MRIis pivotal to diminish the pace of setbacks. Cerebrum tumor is difficult to fix, in light of the fact that the mind has a complex structure and the tissues are interconnected with each other in a complicated manner. In spite of many existing methodologies, vigorous and efficient division of cerebrum tumor is as yet a significant and testing task. [1] Tumor division and classification is a challenging task,because tumors vary in shape, appearance and location. Itishard to completely section and group cerebrum tumor from mono-methodology checks, on account of its confounded structure. X-ray gives the capacity to catch different pictures known as multimodality pictures, which can give the itemized structure of cerebrum to efficiently group the mind tumor. shows diverse MRI modalities of cerebrum.To structure a recognition and finding of mind tumor from MRI is urgent to diminish the pace of losses.[22-24] Mind tumor is difficult to fix, in light of the fact that the cerebrum has an exceptionally intricate structure and the tissues are interconnected with one another in an entangled way. Notwithstanding many existing methodologies, powerful and efficient division of cerebrum tumor is as yet a significant and testing task. Tumor division and classification is a difficult errand, since tumors shift fit as a fiddle, appearance and area. It is difficult to completely portion and order mind tumor from mono-methodology examines, on account of its entangled structure. So we defeat that issue group the mind

tissues tumor region.We get motivated of existing system.we have to match user object with database image using Spatial gray level dependencies method. In that system first we have preprocessing on that images then select feature extraction and compare brain with database and get the result.

Literature survey

A.   Linmin Pei, Syed M. S. Reza and Khan M. Iftekharuddin .[1]

In this work, we propose a novel strategy to improve the predication of mind tumor development by combining with the condition of-workmanship tumor division. The Glioma Image Segmentation and Registration (GLISTR) is known for joint division and deformable enrollment of mind checks just as tumor development forecast utilizing MRI. This paper, without precedent for writing, intends to improve the tumor development forecast by coordinating the development examples of various tissues, for example, rot, edema, and tumor acquired from GLISTR with our stochastic surface based tumor division strategies utilizing a joint name combination (JLF) procedure. We assess the proposed strategy utilizing a few grown-up longitudinal cases from the 2015 BRATS [1] dataset. The test results show contrast of these tissues development expectation by applying GLISTR and joint mark combination. ANOVA investigation recommends measurably improvement in the longitudinal tumor center expectation results.

Improved Performance of Direct Torque Control with PMSM compared to DTC with Induction Motor

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Abstract: For induction motor torque control, direct torque control is becoming the industry standard. This paper proposes a switching loss minimization technique for improved Direct Torque Control (DTC) of permanent magnet synchronous motors in order to increase the drive system's steady-state and dynamic results. Direct torque control (DTC) of a voltage source inverter-supplied PMSM is a simple scheme that requires little computation time, can be implemented without speed sensors, and is unaffected by parameter variations. In theory, the motor terminal voltages and currents are used to calculate the flux and torque of the motor. A voltage vector is chosen to restrict the flux and torque errors within their flux and torque hysteresis bands based on the instantaneous torque and stator flux magnitude errors, as well as estimates of the flux position. The electromagnetic torque, rotor speed, and stator current of DTC with PMSM and DTC with IM were successfully calculated using Total Harmonic Distortion (THD) in this article. As compared to DTC with IM, DTC with PMSM reduced THD by 12 percent in torque, speed, and stator current [21]. Switching Losses Minimization Technique by THD Minimization is used in this article. Since transistors are only switched when necessary to maintain torque and flux within their hysteresis limits, switching losses are minimised, resulting in increased efficiency and lower losses. Matlab SIMULINK has experimentally confirmed direct torque regulation with PMSM and IM.

Keywords: Direct torque control, PMSM, induction motor, torque ripple minimization

1. Introduction

In the area of AC drives for induction motors, Direct Torque Control (DTC) has been extensively studied over the last decade. Takahashi [1] first proposed this control technique in 1986, and Depenbrock [4] developed it in 1988. Despite this, only one major manufacturer has a DTC-based industrial application, which was launched in 1995 [3]. The key benefit of DTC is the high performance (decoupled control stator flux and torque, quick torque response, and robustness) obtained, as well as the scheme's simplicity (coordinate transformation, modulation block, and current regulation block not require). The traditional voltage source inverter (VSI) used in AC drives has two switches per leg, with the load connected to either the upper or lower line of the DC-link. This is referred to as a two-level VSI. However, the maximum voltage that can be handled by quick semiconductors is limited. For high power and voltage applications, a series link is needed, which necessitates a voltage balance. Furthermore, the dV/dt is extremely high, resulting in significant electromagnetic interference (EMI) and high winding insulation tension. Multilevel inverters are a new form of inverter that can resolve the drawbacks of the traditional low-cost two-level VSI [5]. Over the last decade, DTC drive has emerged as a viable alternative to the well-known Vector Control of Induction Machines. Its key feature is that it provides good performance, with results that are as accurate as classical but with many advantages due to its simpler control diagram. As the name implies, DTC (Direct Torque Control) is characterised by directly controlled flux and torque, implying indirectly controlled stator voltage and current. In contrast to traditional vector-controlled drives, the DTC has some benefits, such as approximately sinusoidal stator currents and fluxes. High dynamic efficiency, even when the rotor is locked and at a standstill. Absences of mechanical transducers, absences of coordinates turn There are no current regulators, PWM pulse generation, PI flux and torque control, or coordinate transformation needed, Reduced parameter sensitivity, superior dynamic properties, and a simple control scheme with a short computation time. Traditional DTC has some drawbacks, such as potential issues during startup and low-speed service, and variable switching frequency; these are drawbacks that we want to avoid by combining DTC with PMSM. We'll go into how DTC regulation is used in PMSM in the following parts.[3][6][9].

This paper proposes two separate control methods. The first is focused on a two-level inverter adaptation of the standard DTC scheme. The second is built on a Fuzzy Logic Controller, which is used to replace the DTC's traditional table for inverter state selection. Takahashi [3] and Depenbrock created a direct torque control (DTC), which is a simpler variant of field orientation [4]. A DTC for an induction motor is shown in Fig.1. It is possible to control the stator flux linkage and electromagnetic torque directly in DTC drives by selecting an optimal inverter switching state. Switching state is used to keep flux and torque errors within their hysteresis bands, allowing for the quickest torque response and maximum efficiency at all times. DTC is less dependent on the motor model than field-oriented control since the stator resistance value is the only system parameter used to

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Optimization techniques using DWT-differentiation algorithms for fault detection and relay coordination in microgrid

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Citations (2)   References (24)   Figures (8)

Abstract and Figures

Moreover, optimizing the power allocation coefficients is seen as of the most extreme significance to amplify the exhibition of the framework and coordination between defensive devices. The fault clearing times and relay coordination stability are essential to avoid nuisance tripping. The forward and reverse way operating relay security design for microgrids with the network-associated and islanded ability is utilized. The microgrid distribution frameworks, sporadic framework, fault attributes (regarding grid-associated mode) and the fluctuation of intensity in the power flow direction present difficulties. To build up robust and reliable protection conspire that will have a strong reaction in both grid-associated and grid-disconnected modes, this research work exhibits the novel optimization-based smart, discrete evolution algorithm protection conspires for the microgrid. The suggested system preprocesses the short-circuit current signal waveform utilizing discrete wavelet transform and gauges the most influenced delicate attributes. These are being used to fabricate the choice differential evolution algorithm for enlisting the right relay choice. The broad test outcomes demonstrate that the recommended canny differential transferring plan can be significantly better in giving a compelling protection measure to the safe and anchored microgrid operation. About this research, output signals from differential evolution algorithms are led to decide the viability of the given arrangement in securing overall microgrid while working with grid-connected or grid-disconnected modes. Time-space shown for endorsement purposes is managed using an existing microgrid network in the MATLAB Simulink programming environment. Moreover, it accomplishes the astounding decrease in both the essential and secondary transfer working occasions, which results in a decrease in the all-out relay working time.

+3

Time-current   Grid-connected   Maximum current Iabc measured at DWT
characteristic   during the grid- location R21 an... decomposition ...

Parameters Affecting Springback -A Review

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Abstract: Sheet metal bending processes are used to form components in the various shapes. When the component is formed and the bending forces are removed from the formed up component, the formed component tries to regain its original shape due the elastic forces remaining in it. This movement of the metal due to elastic stresses is called as springback. Due to this desired shape of component is not obtained. The springback is affected by many process parameters like blank holder force, die radius, punch radius etc. and material parameters such as sheet thickness, yield strength, ultimate tensile strength, strain hardening exponent etc.

In this paper some of the parameters such as sheet thickness, R/t ratio, yield strength and ultimate tensile strength affecting on the springback are reviewed.

Keywords: Springback, sheet thickness, R/t ratio, yield strength, ultimate tensile strength.

INTRODUCTION:

Any elastic material when deformed within the elastic region and the load is removed it regains its shape as soon as the load is withdrawn. But when the material is deformed beyond its elastic limit it undergoes permanent deformation. When the material is subjected to bending its outer layers experience tensile stresses and their length increases while the inner layers experience compressive stress and their length shorten. The plane in the material in between the outer and inner layer experiences no stress and this layer is called neutral plane. It experiences no change in length. The material fiber at the neutral plane is known as neutral fiber which retains the original length of material before they were subjected to bending.

The principle of bending involves the stressing of material beyond elastic limit so that it can permanently deform to get the shape of die.

LITERATURE REVIEW:

A lot of research has been done in the last two decades. In last decade many researchers have worked to investigate springback phenomenon, the various parameters which affect the springback and also the methods to reduce it. S. K. Panthi et al. [1] modeled sheet metal bending process based on principal of total elastic incremental plastic strain. Some geometric parameters, mechanical material properties and effect of lubrication condition on the springback was observed. In addition to these parameters an influence of forming load on springback is studied.

[2946]

Effect of Orientation on Springback for Component with Hole and without Hole

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Abstract

Many components are needed to be formed into different shapes depending upon their applications. Whenever the component is formed, it is associated with little or more amount of springback. It is because of the elastic stresses that remain in the bent up part. When the bending force is removed, the elastic stresses remaining in the bent up part try to relieve and due to relieving of these elastic stresses the formed up component try to regain its original shape. This movement of metal due to relieving of stresses is called springback.

In this paper the effect of orientation on the springback is studied for component with hole and without hole. The components are formed in U shape along rolling direction, 45^0 to rolling direction and 90^0 to rolling direction, with hole and without hole in the component. Springback is measured and compared for all the formed up components. It is seen that the springback is minimum both for components with hole and without hole formed along rolling direction. It is also seen that for the components with holes the springback is reduced as compared with the component without hole.

Keywords- Sprinback; orientationt; U shape; forming.

1. INTRODUCTION

Forming is a process, which is used for making the components in different shapes. Springback is the major problem associated with forming process. Springback affects precision of formed up parts. So we are not able to get the desired shape due to springback. Springback is due to elastic recovery during unloading. The change in shape of the component due to elastic stresses is called springback. Therefore it becomes important to predict the springback for the design of punch and die so that the desired shapes can be obtained with accuracy.

In the past two decades a lot of study has been carried out. Recep Kazan et al. [1] studied springback for the process of wipe-bending. By using neural network, a prediction model to predict the springback was developed from data obtained by FEA. The effect of R/t ratio on springback was studied which shows that initially up to R/t ratio equal to 3 the springback is constant and for further increase in R/t ratio springback increases with increase in R/t ratio. Y. E. Ling et al. [2] so as to reduce the time spent on manual corrections of die, they investigated the effect of various parameters like die clearance, die radius, step height and step distance on the springback, for L-bending process using FEA. It was observed that the die clearance and die radius has more influence on springback in compared of step height and the step distance. R. Ankenas and R. Barauskar et al. [3] developed Finite Element model for sheet metal forming of U shaped benchmark, in S-DYNA and the results are validated by comparing with the experimental results published elsewhere. They studied the effect of blank holder force on springback and sensitivity of coefficient of friction to springback. Praveen kumar et al. [4] studied the effect of punch radius and clearance between the die and punch, for L bending using Finite element

Springback in Sheet Metal Forming

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Abstract:
One of the most sensitive features of the sheet metal forming is the elastic recovery during unloading called springback. Sheet metals are prone to little or more amount of springback depending on elastic deformation. Obtaining the desired size and shape of the component and also the design of die depends on the knowledge of the amount of this spring-back. So the accurate prediction of the springback is very important. The springback is affected by the factors such as sheet thickness, material properties, tooling geometry etc. In this paper the effect of various parameters such as sheet thickness, ratio of die radius to sheet thickness, strength coefficients on springback are studied for three different materials namely IS513D, DP600-HDG and 5182 Aluminum by using FEA.

Keywords: U bending, springback, FEA, sheet thickness, R/t.

1. Introduction:

Bending is a very widely used process in forming of the parts. Precision of the formed parts is affected by the elastic recovery during unloading. Due to the elastic recovery, final shape of the component is not as desired. This change in shape due to elastic stresses is called springback. Correct prediction of springback is therefore very important as it assist in the design of punch and die. Also it helps to obtain the desired shapes with accuracy.

Measuring the springback by experimental process is costly and time consuming. In the recent years finite element softwares are very widely used for the prediction of the springback. S. K. Panthi et al. [1] observed the effect of some geometric parameters like die radius, thickness of sheet, sector angle etc. and mechanical material properties such as yield stress, Young's modulus, strain-hardening exponent and lubrication condition on the springback. In addition to these parameters an influence of forming load on springback is studied. It is found that with increase in yield stress there is increase in springback. Also as the Young's modulus increases springback is found decreasing and friction has negligible effect on springback. Recep Kazan et al. [2] studied the springback for the wipe-bending process. Initially the data was obtained from FEA and prediction model of springback was developed by of neural network based on data obtained by FEA. The effect of ratio of die radius to sheet thickness on springback was studied which shows that initially up to R/t ratio equal to 3 the springback is constant and for further increase in R/t ratio springback increases with increase in R/t ratio. M. Bakhshi Jooybari et al. [3] studied the springback experimentally as well as numerically for V and also for U-die bending operation. The effect of various parameters such as sheet thickness, sheet anisotropy and punch tip radius on spring-back/spring-go is studied for CK67 (DIN 17222) steel sheet for V die and U die bending operation. Y. E. Ling et al.

SOLID STATE TECHNOLOGY

CERTIFICATE OF PUBLICATION

This is to Certified the Paper entitled

Springback in Sheet Metal Forming

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Synthesis and Characterization of Nickel-Bismuth Aluminium Ferrite Nano particles by Sol-Gel Technique

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Abstract

Bismuth doped Nickel Aluminium ferrite NiBixAlyFe2-(x+y)O4 (where x= 0, 0.025, 0.050, 0.075, 0.1, 0.15) and (y=0.1, 0.2, 0.3, 0.4, 0.5)Nanoparticles were synthesized at low temperatures using a easy, cost-effective acting refer sol-gel auto oxidation. The standard softness of nickel aluminium ferrite is a big amount of use. Nickel Bismuth Aluminium ferrite is get soft ferrite. The existing job is to survey the knowledge and magnetic place of Bi doped Nickel Aluminium nano-ferrite the synthesized samples. To obtain the parameters of hysteresis, the VSM was used. With changes in the Bi percentage, the magnetic property of the ready samples shows important effect. Spinel ferrite is confirmed from FTIR.

Keywords: Sol-gel; Ni-Bi-Al nanoferrite; XRD; VSM; FTIR etc.

1.Introduction

In the shape of collisions, powders, clusters, rods, wires, and thin films, a wide range of techniques are required to synthesize various forms of nanomaterial[1]. Nanomaterial preparation divided into two wide top-down and bottom-up spectrums, each of which has two physical and wet chemical paths. The nearly big parameters for the activity of nanoparticles are the correct size, well-scattered particles with a small size distribution, equiaxial particle structure, full status, and uniform mixture. Many wet-chemical approaches have the typical characteristic of atomic or molecular scale mixing of materials. Any of the non-conventional methods are a acting of sol-gel, the procedure of co-precipitation, acting of precursor, acting of combustion, hydrothermal, drying by spray. From Etc[2].
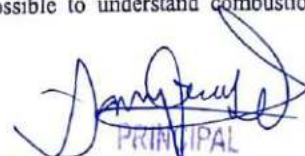
1.1 Sol-gel auto combustion Process

All the samples were processed using the auto combustion methodology of Sol-gel in the current work. For the combustion phase, oxidizing metal salts and combustion fuel are important in the Sol-gel auto combustion method. As oxidizing salts and combustion fuel for all of the sample preparations, metal nitrates and citric acid were in use. Both chemicals had an analytical reagent of high purity and were used without further purification. For the analysis of ultrafine hexaferrite powders, the Sol-gel auto oxidation process has been shown to be an super simple, time-saving and energy-efficient path[3].

1.2 Principle

The gelling and eventual burning of an liquid solution containing salts and organic fuel is the basis of the Sol-gel process. As starting ingredients, oxidizing metal salts such as metal nitrates and a burning fuel such as citrate acid, polyacrylic acid, or urea are used. Citric acid is ideal for receiving precursors of change metal oxides due to the strong potential of chelating metallic ions and too low temperatures of decomposition. During the initial stage of the preparation process, this approach uses a solvent, since the reactants are well-dispersed to have a homogeneous reaction mixture in a much higher reactive state. Organic fuel plays an of import role in the combustion reaction; it forms complexes with metal ions that prevent hydroxylated compounds from precipitating. It is possible to understand combustion as a
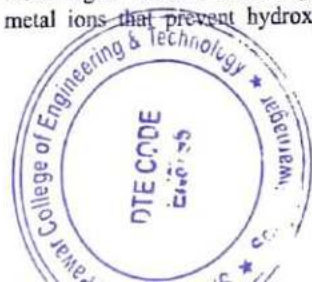
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Synthesis and Characterization of Magnesium Zinc Ferrite Nanoparticles by Sol Gel (Auto Combustion) Method

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Abstract: Zinc Magnesium Ferrite is a magnetic substance of a very high permeability. The amount of magnesium and zinc used in the ferrite material's synthesis determines its permeability. The current study examines the amounts of magnesium, zinc, and ferrite in order to determine variations in magnetization. Also, in the present work Zinc nitrate and Ferric nitrate are used as precursor. A series of $Mg_xZn_{1-x} Fe_2 O_4$ (x= 0.0, 0.6, 1.0) ferrite nanoparticles have been synthesized followed by annealing at a temperature of 1050 ^{0}c . FTIR spectra presents the characteristics peaks of spinel structure. VSM measures the magnetic behavior of the present magnetic sample.
Keywords: Sol-Gel, VSM, FTIR

I. INTRODUCTION

The use of matter on an atomic, molecular, and supramolecular scale for industrial applications is known as nanotechnology. The oldest and most commonly accepted concept of nanotechnology applied to the basic technical aim of specifically modifying atoms and molecules for the fabrication of macro-scale objects, which is now known as molecular nanotechnology. The National Nanotechnology Initiative later developed a more abstract definition of nanotechnology, defining it as the modification of matter with at least one dimension scaled between 1 and 100 nanometers[1].

Since quantum mechanical effects are significant at this quantum-realm scale, the concept has changed from a specific technical target to a science category that encompasses all forms of research and technologies concerned with the special properties of matter that exist below the specified size threshold[2]. As a result, the plural form "nanotechnologies" as well as "nanoscale technologies" are often used to refer to a wide variety of experiments and applications with a general characteristic of dimension. Surface science, organic chemistry, molecular biology, semiconductor physics, energy conservation, robotics, microfabrication, and molecular engineering are only a few examples of nanotechnology as characterised by scale. Nanotechnology has the ability to produce a broad variety of novel materials and products with applications in nanomedicine, nanoelectronics, biomaterials, energy processing, and consumer goods[3]. Nanotechnology, on the other hand, poses many of the same questions as every emerging technology does, such as worries over nanomaterials' toxicity and environmental consequences, as well as their possible impacts on global economies and theories about multiple doomsday scenarios.

These issues have sparked a debate among activist groups and governments about whether nanotechnology needs special regulation[4].

II. SOL-GEL METHOD

"The sol-gel process is a wet-chemical technique that uses either a chemical solution (sol short for solution) or colloidal particles (sol for nanoscale particle) to produce an integrated network (gel).

Metal alkoxides and metal chlorides are typical precursors. They undergo hydrolysis and polycondensation reactions to form a colloid, a system composed of nanoparticles dispersed in a solvent. The sol evolves then towards the formation of an inorganic continuous network containing a liquid phase (gel).

Formation of a metal oxide involves connecting the metal centers with oxo (M-O-M) or hydroxo (M-OH-M) bridges, therefore generating metal-oxo or metal-hydroxo polymers in solution. After a drying process, the liquid phase is removed from the gel. Then, a thermal treatment (calcination) may be performed in order to favor further polycondensation and enhance mechanical properties"[3].

Modal Analysis of Carbon Fiber and Carbon Fiber - Rubber Composite Plates

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Abstract— The research work has done to improve the dynamic properties of the material such as mode shape natural frequencies etc. of Fiber- reinforced polymer composite in which the material damping is studied either with macro mechanical analysis alone or the same with micro-mechanical analysis. For support of an engine, motor, pump or any other mechanical device must be used Structural elements. Materials that possess high damping and high stiffness are not common in any mechanical components. Their vibration-damping depends on the viscoelastic nature of the material. They are mainly obtained from all categories of material combination such as the damping by rubber, polymers. In this project, we are taking two composite plates having a dimension of 140 X 170 mm. one which has a rubber sheet which has inserted in between two carbon fiber sheet layers and others who have only layers of carbon fiber. Modal analysis of two composite plates has performed in ANSYS 19 software to obtain mode shapes and respective natural frequencies of the structure.

Keywords— Dynamic Properties, Viscoelastic, Mode shapes, Fiber Reinforced Polymer, Damping, and Natural Frequency

I. INTRODUCTION

The composite material is defined as the system of fabric consisting of a mixture of various constituents. These materials are often prepared by putting two or more dissimilar materials in such a way that they function mechanically as one unit. The material must be a mixture of a minimum of two materials that are chemically distinct from each other with an interface separating the components composite materials are more advanced composites as compared to conventional simple materials. They have better flexibility as compared to other conventional materials the properties of these materials are different from their constituents. Composite materials are made by various methods some are mentioned that hand layup or chemical method. Carbon composites have carbon fiber reinforced in the matrix of carbon carbon-carbon composites are utilized in very heat environments up to 6000 °f 3315°c and are 30 percentile lighter than graphite fibers and also it's 20 times stronger. Their advantages include low density, good tensile as well as compressive strength, well thermal conductivity, high fatigue life, and a high coefficient of friction. One of the most advantages is it can withstand at high temperatures. Composite materials are those materials which include more than two materials which are synthetically made with dissimilar materials. It also includes chemically different than conventional materials, its properties are good than conventional. The work of a reinforced matrix in a material is to give shape and protect the reinforcement to the environmental loads and toughness of the material, the main role of reinforcement in improving the properties of composite materials. Free vibration analysis was administered for identifying the natural frequencies.

II. LITERATURE REVIEW

Li Ma, Yun-Long Chen, Jin-Shui Yang, Xin-Tao Wang, Guo-Lin Ma, Rüdiger Schmidt, and Kai-Uwe Schröder, [1] has considered Auxetic materials and its structures as a class of artificial materials that do not exist in nature that have been widely read and assessed for some applications. This paper centers on the creation and vibration damping of the carbon fiber composite auxetic twofold bolt ridged sandwich boards (DACSPs). The negative Poisson's proportion impacts of the composite auxetic DACSPs are diagnostically examined dependent on vitality technique. 3D finite component (FE) models joined with Modal Strain Energy (MSE) approach are created to explore their vibration and damping qualities. To approve the numerical models in the current investigation, the composite auxetic DACSPs and such structures embedded with high damping layers are planned and fabricated. Modular vibration and three-point twisting tests are led to examine their vibration damping and bowing reactions. The outcomes show that the 3D FE models joined with the MSE approach are legitimate to anticipate the modular properties of the composite auxetic DACSPs.

Jin-Shui Yang, [2] has concentrated in this exploration it presents the imperfections that can without much of a stretch show up in composite grid bracket center sandwich structures during the mind-boggling readiness process, which may essentially influence the auxiliary reaction and decline the

Use of Industrial by-product to Produce Eco Friendly Geopolymer Concrete

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ABSTRACT: Concrete is one of the most widely used construction materials. The global use of cement concrete is second only to the use of water. The demand for concrete as a construction material is increasing day to day. The production process of cement releases some harmful substances, which adversely affect the environment. Design and experimental investigation on development of geopolymer concrete is important because increase in use of geopolymer concrete leads to reduction in use of regular cement concrete and ultimately production of cement. Also, the fly ash and ground granulated blast furnace slag is used and the problem of dumping of these materials ultimately gets solved.

In this experimental research cement is totally replaced by use of fly ash and ground granulated blast furnace slag (GGBS), and activated by use of Alkali Activated Solution to form a cementitious paste. From the experimental work it is observed that the geopolymer concrete with use of 40% fly ash and 60% GGBS gives 35% more strength than target strength

KEYWORDS: Fly ash, Ground granulated blast furnace slag, Alkali activator solution, Geopolymer concrete

I. INTRODUCTION

Concrete is one of the most common and widely used construction materials. The global use of cement concrete is second only to the use of water. It is mainly related to the Portland cement as the main component for making concrete. The demand for concrete as a construction material is increasing day to day. With infrastructure development growing and the housing sector booming, the demand for cement is also bound to increase. After aluminium and steel, the manufacturing of Portland cement is the most energy intensive process as it consumes 4GJ per tonne of energy. After thermal power plants and the iron and steel sector, the Indian cement industry is the third largest user of coal in the country. The manufacturing of Portland cement is an energy intensive process and releases a large amount of greenhouse gas to the atmosphere. Climate change due to global warming, one of the greatest environmental issues, has become a major concern during the last decade. Global warming is caused by the emission of greenhouse gases, such as CO2, to the atmosphere by human activities. CO2 contributes to nearly 2/3rd of global warming. The cement industry is responsible for major CO2 emissions, because the production of one tonne of Portland cement emits approximately one tonne of CO2 into the atmosphere.

Producing one tonne of cement requires about 2 tonnes of raw materials (shale and limestone) and releases 0.87 tonnes of CO2, about 3 kg of Nitrogen Oxide (NOx) and some other harmful substances also. The cement industry has been making significant progress in reducing CO2 emissions through improvements in process technology and enhancements in process efficiency, but further improvements are limited because CO2 production is inherent to the basic process of calcinations of limestone. Mining of limestone has an impact on land-use patterns, local water regimes and ambient air quality and thus remains as one of the principal reasons for the high environmental impact of the industry. Dust emissions during cement manufacturing have long been accepted as one of the main issues facing the industry. The industry handles millions of tonnes of dry material. Even if 0.1 percent of this is lost to the atmosphere, it can cause havoc environmentally. Fugitive emissions are therefore a huge problem, compounded by the fact that there is neither an economic incentive nor regulatory pressure to prevent emissions.

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A Survey on-Phishing Website Detection using Extreme Learning Machine

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ABSTRACT

Phishing sites which expect to take the victims confidential data by diverting them to surf a fake website page that resembles a honest to goodness one is another type of criminal acts through the internet and its one of the especially concerns toward numerous areas including e-managing an account and retailing. Phishing site detection is truly an unpredictable and element issue including numerous components and criteria that are not stable. Proposed an intelligent model for detecting phishing web pages based on Machine Learning. Types of web pages are different in terms of their features. Hence, we must use a specific web page features set to prevent phishing attacks. We proposed a model based on Machine Learning techniques to detect phishing web pages. We have done analysis of three models of Machine Learning Algorithms and we have suggested some new rules to have efficient feature classification.

Keywords: Phishing websites, Machine Learning, SVM, NB, ELM

1.INTRODUCTION

Technology is growing rapidly day-by-day and with this rapid growing technology internet has become an essential part of human's daily activities. Use of internet has grown due to the rapid growth of technology and intensive use of digital systems and thus data security has gained great importance. The primary objective of maintaining security in information technologies is to ensure that necessary precautions are taken against threats and dangers likely to be faced by users during the use of these technologies. Phishing is the fraudulent attempt to obtain sensitive information such as usernames, passwords and credit card details by disguising as a trustworthy entity in an electronic communication. Typically carried out by email spoofing or instant messaging, it often directs users to enter personal information at a fake website, the look and feel of which is identical to the legitimate site. Information security threats have been seen and developed through time along development in the internet and information systems. The impact is the intrusion of information security through the compromise of private data, and the victims may lose money or other kinds of assets at the end. Internet users can be affected from different types of cyber threats such as private information loss, identity theft, and financial damages. Hence, using of the internet may suspect for home and official environments. Identify and defend against privacy leakage efficient analytical tools are required for users to reduce security threats. Effective systems that can improve self-intervention must be formed using artificial intelligence-based information security management system at the time of an attack. Phishing is an Internet-based attack that seduces end users to visit fake websites and give away personal information.

2.RELATED WORK

With the event of Information and Communication Technology, various varieties of information security threats may be seen. These threats are important within the prevention of damage to person or institution to guard data on computer systems. Studies on various phishing detection methods are seen when the literature is reviewed. In these studies, it is observed that ML is challenging techniques may be used. Santhana Lakshmi and Vijaya they used techniques of Machine learning to verify supervised learning algorithms and modeling the prediction task that Multi-Layer Perceptron. Decision tree and Naive bayes classifications were used for observing technique for web Phishing Detection. It candetec. As compared to other learning algorithms the choice tree classifier is more accurate [2]. ZouFutai, Pei Bei and Panli proposed Uses Graph Mt some potential phishing which can't be detected by URL analysis. It uses contact of user and website. To induce dataset from the real traffic of a an oversized ISP. After anonym zing these
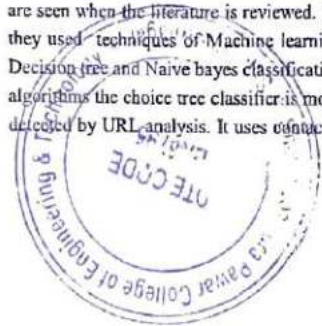
A Survey On:-IOT Based Industrial Plant Safety Gas Leakage

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ABSTRACT

- Most of the fire-breakouts in industries are due to gas leaks. These cause dreadful damage to the equipment, human life leading to injuries, deaths, and environment. Currently available leakage detectors warn the people around using on-site alarms. So, this project proposes a leakage detector which sends the warning to the concerned people through SMS. This detector senses the presence of harmful gases particularly, LPG, Methane and Benzene. LPG and Methane gases catch fire easily resulting in blasts. Benzene is carcinogen effecting the health of workers, if inhaled in higher concentrations. Hence, detection of these gases is essential. This low cost project includes MQ6, MQ4 and MQ135 gas sensors which detect LPG, Methane and Benzene gas leaks respectively and uses a Wi-Fi module. The concentration levels of the above mentioned gases are uploaded in the UBIDOTS cloud and the login details are included in the alert message so that the user can check, if needed. The prototype of the proposed system generates a sound alert using buzzer on detection of a dangerous leakage and sends an SMS to the concerned person using IFTTT web service. Different color LEDS are used to specify the gas leaked for example, RED LED indicates the presence of LPG.

Keyword :- MQ6 Sensor, MQ-135 Sensor, Arduino Uno.

1. INTRODUCTION

The number of gas leaks that happen every year on industrial plants is obscure. The majority of these leakages, regardless of whether recognized, go unreported when they do not straightforwardly prompt tangible mishaps. Environmental Protection Agency (EPA) reports evaluate that in the United States alone, these plants discharge close to one billion cubic meters of methane (not taking some other gas into account). The majority of these misfortunes (around 80%) appear to originate from flawed compressors, valves, seals, and connectors. In 2012, around 2200 million metric tons of CO2 were inadvertently discharged from oil frameworks and other synthetic procedures vital for the creation of iron, bond, plastics and steel. It is assessed that around 800000 holes are examined every year on refineries, with in the vicinity of

200 KM having specifically brought about death toll, wounds, harmed hardware, or operational misfortunes. To put it plainly, industrial gas leakages introduce a note worthy challenge in the mission for protected, ecological cordial, and financially savvy plants. LPG and Natural gas comprise of mixture of gases like propane, butane and methane. These gases can catch fire and burst into flames effectively . In the process of their production and transportation when a leak occurs, the leaked gases may prompt blast. The number of deaths due to the blast of gas barrels has been increases. So the spillage ought to be controlled to shield individuals from peril. Bhopal gas disaster is a case for mishaps because of gas leakage. Gas leakage recognition is not just vital yet controlling the spillage is also equally important. LPG is the most commonly

Malaria Detection Using Hybrid Approach

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ABSTRACT: Digestive ailment revelation is a disturbing situation for most trained professionals and it requires experiences and expertise. The machine learning (ML) procedure can be used to relive this issue. This paper endeavor to find sensible model to help with recognizing wilderness fever with accuracy. The used dataset was conveyed by National Institute of Health in USA moreover contained a flat out number of 27,560 red platelet (RBC) pictures with indistinguishable instances of parasitized and uninfected RBCs pictures. A singular mystery layer feed-forward brain associations theory to be explicit Extreme Learning Machine (ELM) model was applied to bunch and predict regardless of whether a patient has been influenced by wilderness fever. In this paper we are proposing the convolutional brain organization and backing vector machine based jungle fever discovery. In this paper we get 89.75% accuracy on 50epochs.

KEYWORDS: Malaria Detection, Convolutional Neural Network, Neural Network, Deep Learning, SVM.

I. INTRODUCTION

Mechanized analysis of jungle fever has gotten consideration in ongoing patterns. In the clinical field particularly through tiny pictures the conclusion of jungle fever is financially savvy and hearty which measure and group the tainted parasite all the more precisely. Jungle fever is a dangerous illness which prompts expansion in death rate. It is an irresistible sickness brought about by Plasmodium parasites which are communicated to human through tainted female mosquitoes known as the vectors (transporters). The plasmodium species which cause intestinal sickness incorporate falciparum, vivax, malariae, ovale. The determination of jungle fever requires costly procedures which are inaccessible in the country regions where the illness is predominant. Minute assessment of Giemsa stained blood spreads is ordinarily utilized for deciding the formative phases of jungle fever parasites and its development in human. The human eyebrain co-appointment framework is the broadly followed procedure for identification of tainted cells and parasites in tiny pictures and the last determination is finished. But since of more number of tests to be broke down and time intricacy, there can be blunder in identification and the precision will be brought down. Along these lines, computerized framework for recognition of parasites will be of extraordinary need.

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G. Karthik S. Muttan M. P. Saravanan R. Seetharamanet al. [1] stated that, this paper quantifies and classifies the red blood cells infected by Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale and Plasmodium malariae in thin blood smears. The experimentation was conducted in MATLAB in which image acquisition, pre-processing including segmentation, classification and a combination of other image processing techniques were performed.

T. A. Aris, S. A. Nasir [2] proposed that proposed fast kmeans clustering is used because of its advantage which is no need to retrain cluster center that causes time taken to train the image cluster centers is reduce. Meanwhile, different color models have been utilized in order to identify the most relevant color model that obviously highlight the parasites.

Hussin K. Ragb, Ian T. Dover [3] proposed that The NIH Malaria Dataset from the National Institute of Health, a dataset of 27,558 images formed from microscopic patches of red blood smears, is used in these experiments. The dataset is segmented into 80% training set, 10% validation set, and 10% test set. The validation set is used as the decision metric for choosing ensemble network architectures and the test set is used as the evaluation metric for each model.

Mohammed Osman, Hassan Salih, Osama Salih and Nazar [4] stated that in this paper, The readings are divided into two parts: negative readings were thirty four and positive readings are 6 Readings. The scattering angle depends on the absorption of the malaria parasite. The detection accuracy of our system is determined to be 95%, these are Male results but unfortunately all reading for females is zero.

EMOTION DETECTION SYSTEM USING MACHINE LEARNING

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Abstract

This paper describes an emotion detection system based on real-time detection using image processing with human-friendly machine interaction. Facial detection has been around for decades. Taking a step ahead, human expressions displayed by face and felt by the brain, captured via video, electric signal, or image form can be approximated. To recognize emotions via images or videos is a difficult task for the human eye and challenging for machines thus detection of emotion by a machine requires many image processing techniques for feature extraction. This paper proposes a system that has two main processes such as face detection and facial expression recognition (FER). This research focuses on an experimental study on identifying facial emotions. The flow for an emotion detection system includes the image acquisition, preprocessing of an image, face detection, feature extraction, and classification. To identify such emotions, the emotion detection system uses KNN Classifier for image classification, and Haar cascade algorithm an Object Detection Algorithm to identify faces in an image or a real-time video. This system works by taking live images from the webcam. The objective of this research is to produce an automatic facial emotion detection system to identify different emotions based on these experiments the system could identify several people that are sad, surprised, and happy, in fear, are angry, etc.

Keywords - *Emotion Detection, Haar Cascade, KNN,Face Detection, Machine Learning.*

INTRODUCTION

Human Emotion Detection is applied in many areas where additional security or data about the person is a big requirement. To set up, the second layer of security gives the opportunity to not only detect face with

TO STUDY AND COMPARISON OF SOUND INTENSITY AT DIFFERENT PLACES.

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Abstract: Sound intensity level is different at different places. Now days there are different types of Sound meter is available for measuring Sound Intensity level. We study &compare the sound intensity level in Decibel (dB) at different places such as Hill Station, Bus Stand, Sugar factory, Market & School. All these places are from Someshwarnager which is in Baramati taluka & district of it is Pune. Sound intensity level is high at Some places & some places it is low. Comparison of Sound intensity level at different places clearly shows by graph

Index Terms - Sound Intensity Meter, Decibel (dB)

I. INTRODUCTION

A useful quantity for describing the loudness of sounds is called **sound intensity**. In general, the intensity of a wave is the power per unit area carried by the wave. Power is the rate at which energy is transferred by the wave. In equation form, intensity I is $I=P/A$, where P is the power through an area A. The SI unit for I is W/m^2. The intensity of a sound depends upon its pressure amplitude. Sound intensity level is varied with places & sound meter is use for measuring this level. At every place of sound intensity is different, so measuring it we got the information about Sound intensity level.
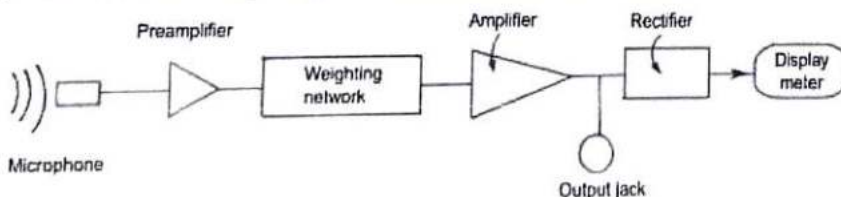

Fig.1. block diagram of sound meter

II. WORKING OF SOUND METER

There square measure two basic ways that of chase and measurement noise pollution: sound level meter measurements and noise mapping calculations with legendary acoustic sound power of sound sources (traffic, industrial plants, etc.). the necessity that measurements be densely sampled to get the whole coverage of a selected space will be quite difficult once mistreatment the sound level meter. The sound level meter consists of a tag mike, electronic circuits, and a show. The mike detects tiny atmospheric pressure variations related to sound and converts them into electrical signals. The signals mentioned on top of square measure then processed mistreatment the instrument's electronic equipment. The shows the sound level in decibels.

III. APPLICATIONS OF SOUND METER

There are many different applications for Sound level meters

1. Noise at Work & Occupational Noise.
2. Environmental & Community Noise.
3. Testing of fire alarms, simple noise level checks in offices, machinery noise verification.

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Mechanical Characterization and Microstructural Analysis of Hybrid Composites (LM5/ZrO$_2$/Gr)

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Hussein Mohamed Abdelmoneam Hussein [2,3] and Sharad Ramdas Gawade [4]

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Abstract: Hybrid composites recently developed as highly effective, high-strength structural materials that are increasingly used. Aluminum matrix hybrid composites strengthened with ceramic particulates are commonly used in marine, aerospace, and defense applications because of their exceptional properties. Zirconia-reinforced composites are favored because these composites display high refractory properties, excellent abrasion resistance, and chemical resistance compared to composites of other reinforcements. For applications where lightweight and superior performance is paramount, such as parts for spacecraft, fighter aircraft, and racecars, graphite composites are the material of choice. In this research work, an effort was made to combine the properties of zirconia and graphite by producing a unique metal matrix composite of LM5 aluminum alloy reinforced with 6% zirconium dioxide (zirconia), using the stir casting process by changing the percentage of the weight of graphite to 2%, 3%, and 4%. The test specimens were prepared and evaluated in compliance with ASTM standards to study micro- and macrohardness, and impact, tensile, and compressive strength. Microstructural studies of composites performed through optical microscopy and SEM expose the unvarying dispersal of particulates of ZrO$_2$/graphite in the aluminum matrix. The hardness, impact, and compressive strength are enhanced due to the addition of reinforcement.

Keywords: hybrid composites; characterization; zirconia; graphite; SEM; microstructure

1. Introduction

Aluminium matrix composites (AMCs) are recognized as materials with enhanced reliability for specific engineering fields. In some instances, they substitute homogenous alloy systems and, in particular cases, similar materials in terms of efficiency and economy [1,2]. Among several light metals such as Mg, Al, and Ti used as matrices, Al and its alloys are used more extensively as the matrices for MMCs [3,4]. This is related to properties such as being lightweight, and having a high corrosion resistance and ease of fabrication, which satisfy a broad range of current and potential requirements [5,6]. LM5 is a widely used choice of special-purpose alloy as a matrix material compared to several other types of aluminium alloys, due to its favorable mechanical properties combined with efficient formability and corrosion resistance used for marine applications. Aluminium alloys have a meager resistance to wear compared with other metallic materials. To increase toughness and strength, the aluminium alloy must be reinforced. A variety of materials such as silicon carbide (SiC), titanium carbide (TiC), boron carbide (B$_4$C), aluminium oxide (Al$_2$O$_3$), silicon nitride (Si$_3$N$_4$), zirconium dioxide (ZrO$_2$), zirconium silicate (ZrSiO$_4$), boron nitride (BN), and sometimes even softer materials such as graphite and mica, are also used as reinforcements. The materials that stand out are ceramics rather than ferrous

Patent

Statement & Undertaking under Section 8

Application Number:	202021048782
Date of Filing:	09/11/2020 14:17:44
Type Of Applicant:	NP
Title Of Invention:	SMART Automated Pollution Level Indicator for Vehicles.
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Applicant Name:	PRAVIN VITTHAL JAGTAP (JUNIOR ENGINEER) , NITIN SHIVRAM SONWANE (JUNIOR ENGINEER) , MOHAN CHAVAN (JUNIOR ENGINEER) , DR. SANJAY DEOKAR (PRINCIPAL) , ABHIJIT PRAKASH BHUJBAL (JUNIOR ENGINEER) , YOGESH MOHANRAO NIGADE (ASST.PROFESSOR)
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G. Karthik S. Muman M. P. Saravanan R. Seetharaman et al. [1] stated that, this paper quantifies and classifies the red blood cells infected by Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale and Plasmodium malariae in thin blood smears. The experimentation was conducted in MATLAB in which image acquisition, pre-processing including segmentation, classification and a combination of other image processing techniques were performed.

T. A. Adu, S. A. Nasir [2] proposed that proposed fast kmeans clustering is used because of its advantage which is no need to retrain cluster center that causes time taken to train the image cluster centers is reduce. Meanwhile, different color models have been utilized in order to identify the most relevant color model that obviously highlight the parasites.

Husain K. Ragb, Ian T. Dover [3] proposed that The NIH Malaria Dataset from the National Institute of Health, a dataset of 27,558 images formed from microscopic patches of red blood smears, is used in these experiments. The dataset is segmented into 80% training set, 10% validation set, and 10% test set. The validation set is used as the decision metric for choosing ensemble network architectures and the test set is used as the evaluation metric for each model.

Mohammed Osman, Hassan Sahh, Osama Salh and Nazar [4] stated that in this paper, The readings are divided into two parts negative readings were thirty four and positive readings are 6 Readings. The scattering angle depends on the absorption of the malaria parasite. The detection accuracy of our system is determined to be 95%, these are Male results but unfortunately all reading for females is zero.

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EMOTION DETECTION SYSTEM USING MACHINE LEARNING

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Abstract

This paper describes an emotion detection system based on real-time detection using image processing with human-friendly machine interaction. Facial detection has been around for decades. Taking a step ahead, human expressions displayed by face and felt by the brain, captured via video, electric signal, or image form can be approximated. To recognize emotions via images or videos is a difficult task for the human eye and challenging for machines thus detection of emotion by a machine requires many image processing techniques for feature extraction. This paper proposes a system that has two main processes such as face detection and facial expression recognition (FER). This research focuses on an experimental study on identifying facial emotions. The flow for an emotion detection system includes the image acquisition, preprocessing of an image, face detection, feature extraction, and classification. To identify such emotions, the emotion detection system uses KNN Classifier for image classification, and Haar cascade algorithm an Object Detection Algorithm to identify faces in an image or a real-time video. This system works by taking live images from the webcam. The objective of this research is to produce an automatic facial emotion detection system to identify different emotions based on these experiments the system could identify several people that are sad, surprised, and happy, in fear, are angry, etc.

Keywords - *Emotion Detection, Haar Cascade, KNN,Face Detection, Machine Learning.*

INTRODUCTION

Human Emotion Detection is applied in many areas where additional security or data about the person is a big requirement. To set up, the second layer of security gives the opportunity to not only detect face with

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TO STUDY AND COMPARISON OF SOUND INTENSITY AT DIFFERENT PLACES.

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Abstract: Sound intensity level is different at different places. Now days there are different types of Sound meter is available for measuring Sound Intensity level. We study &compare the sound intensity level in Decibel (dB) at different places such as Hill Station, Bus Stand, Sugar factory, Market & School. All these places are from Someshwarnager which is in Baramati taluka & district of it is Pune. Sound intensity level is high at Some places & some places it is low. Comparison of Sound intensity level at different places clearly shows by graph

Index Terms - Sound Intensity Meter, Decibel (dB)

I. INTRODUCTION

A useful quantity for describing the loudness of sounds is called **sound intensity**. In general, the intensity of a wave is the power per unit area carried by the wave. Power is the rate at which energy is transferred by the wave. In equation form, intensity I is $I=P/A$, where P is the power through an area A. The SI unit for I is W/m^2. The intensity of a sound depends upon its pressure amplitude. Sound intensity level is varied with places & sound meter is use for measuring this level. At every place of sound intensity is different, so measuring it we got the information about Sound intensity level.
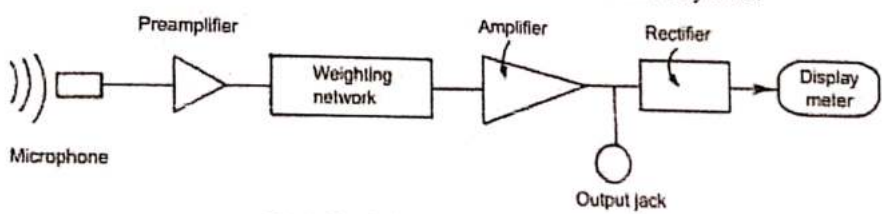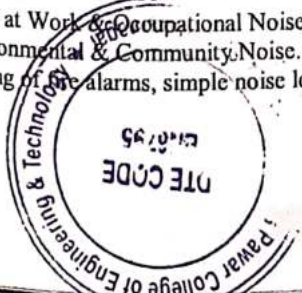

Fig.1. block diagram of sound meter

II. WORKING OF SOUND METER

There square measure two basic ways that of chase and measurement noise pollution: sound level meter measurements and noise mapping calculations with legendary acoustic sound power of sound sources (traffic, industrial plants, etc.). the necessity that measurements be densely sampled to get the whole coverage of a selected space will be quite difficult once mistreatment the sound level meter. The sound level meter consists of a tag mike, electronic circuits, and a show. The mike detects tiny atmospheric pressure variations related to sound and converts them into electrical signals. The signals mentioned on top of square measure then processed mistreatment the instrument's electronic equipment. The shows the sound level in decibels.

III. APPLICATIONS OF SOUND METER

There are many different applications for Sound level meters

1. Noise at Work & Occupational Noise.
2. Environmental & Community Noise.
3. Testing of fire alarms, simple noise level checks in offices, machinery noise verification.

crystals

Article

Mechanical Characterization and Microstructural Analysis of Hybrid Composites (LM5/ZrO$_2$/Gr)

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Abstract: Hybrid composites recently developed as highly effective, high-strength structural materials that are increasingly used. Aluminum matrix hybrid composites strengthened with ceramic particulates are commonly used in marine, aerospace, and defense applications because of their exceptional properties. Zirconia-reinforced composites are favored because these composites display high refractory properties, excellent abrasion resistance, and chemical resistance compared to composites of other reinforcements. For applications where lightweight and superior performance is paramount, such as parts for spacecraft, fighter aircraft, and racecars, graphite composites are the material of choice. In this research work, an effort was made to combine the properties of zirconia and graphite by producing a unique metal matrix composite of LM5 aluminum alloy reinforced with 6% zirconium dioxide (zirconia), using the stir casting process by changing the percentage of the weight of graphite to 2%, 3%, and 4%. The test specimens were prepared and evaluated in compliance with ASTM standards to study micro- and macrohardness, and impact, tensile, and compressive strength. Microstructural studies of composites performed through optical microscopy and SEM expose the unvarying dispersal of particulates of ZrO$_2$/graphite in the aluminum matrix. The hardness, impact, and compressive strength are enhanced due to the addition of reinforcement.

Keywords: hybrid composites; characterization; zirconia; graphite; SEM; microstructure

1. Introduction

Aluminiummatrix composites (AMCs) are recognized as materials with enhanced reliability for specific engineering fields. In some instances, they substitute homogenous alloy systems and, in particular cases, similar materials in terms of efficiency and economy [1,2]. Among several light metals such as Mg, Al, and Ti used as matrices, Al and its alloys are used more extensively as the matrices for MMCs [3,4]. This is related to properties such as being lightweight, and having a high corrosion resistance and ease of fabrication, which satisfy a broad range of current and potential requirements [5,6]. LM5 is a widelyused choice of special-purpose alloy as a matrix material compared to several other types of aluminium alloys, due to its favorable mechanical properties combined with efficient formability and corrosion resistance used for marine applications. Aluminium alloys have a meager resistance to wear compared with other metallic materials. To increase toughness and strength, the aluminium alloy must be reinforced. A variety of materials such as silicon carbide (SiC), titanium carbide (TiC), boron carbide (B$_4$C), aluminium oxide (Al$_2$O$_3$), silicon nitride (Si$_3$N$_4$), zirconium dioxide (ZrO$_2$), zirconium silicate (ZrSiO$_4$), boron nitride (BN), and sometimes even softer materials such as graphite and mica, are also used as reinforcements. The materials that stand out are ceramics rather than ferrous

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SPAM DETECTION AND FAKE USER IDENTIFICATION

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Abstract: The popularity of Online Social Networks (OSNs) is often faced with challenges of dealing with undesirable users and their malicious activities in the social networks. The most common form of malicious activity over OSNs is spamming wherein a bot (fake user) disseminates content, malware/viruses, etc. to the legitimate users of the social networks. The common motives behind such activity include phishing, scams, viral marketing and so on which the recipients do not indent to receive. It is thus a highly desirable task to devise techniques and methods for identifying spammers (spamming accounts) in OSNs. With an aim of exploiting social network characteristics of community formation by legitimate users, this paper presents a community-based framework to identify spammers in OSNs. The framework uses community-based features of OSN users to learn classification models for identification of spamming accounts. The preliminary experiments on a real-world dataset with simulated spammers reveal that proposed approach is promising and that using community-based node features of OSN users can improve the performance of classifying spammers and legitimate users.

Keywords: Classification, Fake user detection, Online social network, Spammer's identification.

I. INTRODUCTION

In this paper we examine the approaches used to detect spammers on Twitter in this research. Furthermore, a taxonomy of Twitter spam detection algorithms is offered, which groups the strategies into four categories based on their capacity to detect: I fake content, (ii) spam based on URL, (iii) spam in hot topics, and (iv) false users. The presented methodologies are also compared based on several characteristics, such as user characteristics, content characteristics, graph characteristics, structural characteristics, and temporal characteristics

II. PROBLEM STATEMENT

The profile data in social networks consist of two main parts, static and dynamic. Former is about the information which is set by the user statically, while the latter is observed by the system and is the result of users' activity on the social network. The static data typically includes users' demographics and interests, and dynamic data relates to user activities and position in the social network. Most of the existing research solutions depend on both static and dynamic data, which is inapplicable to other social networks, where it has merely a smaller number of visible static profiles and no dynamic profile details to the public. Due to its privacy policies and very restricted information visibility, none of the existing practical and theoretical means of fake profile detections are feasible to apply. Therefore, in this research our goal is to identify an approach to determine the spammers and fake profiles in Social Networks.

III. LITERATURE SURVEY

In recent years, review spam detection has received significant attention in both business and academia due to the potential impact fake reviews can have on consumer behaviour and purchasing decisions. This survey covers machine learning techniques and approaches that have been proposed for the detection of online spam reviews. Supervised learning is the most frequent machine learning approach for performing review spam detection; however, obtaining labelled reviews for training is difficult and manual identification of fake reviews has poor accuracy. This has led to many experiments using synthetic or small datasets. Features extracted from review text (e.g., bag of words, POS tags) are often used to train spam detection classifiers. An alternative approach is to extract features related to the metadata of the review, or features associated with the behaviour of users who write the reviews. Disparities in performance of classifiers on different datasets may indicate the review spam detection may benefit from additional cross domain experiments to

A Survey on: "Control Electric Devices by using Android Phone"(HOME AUTOMATION)

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Abstract: This paper presents a low-cost flexible and reliable home monitoring and control system with additional security using ESP32, with IP connectivity through local Wi-Fi for accessing and controlling devices by formal user remotely using android smart phone application. This system is server selfgoverning and uses internet of things to control human desired appliances starting from industrialized machine to user goods. Home monitoring and device control system not only refers to decrease human efforts but also save the energy and time competence. To demonstrate the effectiveness and feasibility of this system, in this we presents a home monitoring system by using ESP32 module. It helps the user to monitor various conditions in the home like room temperature, gas leakage, water levels in the tank and person detection and control various appliances such as light, fan, motor, gas knob and take decision based on the feedback of sensors remotely.

Keywords: ESP32, Internet of Things (IoT), Wi-Fi network, PIR (passive infrared) sensor

I. INTRODUCTION

The day by day innovation improved from automatic machine to customer products. IoT is another pattern advancement that empowers us to screen and control hardware devices through the web. Here we propose to use IoT in order to screen and control home apparatuses, in this way computerizing present day homes through a web. This proposed framework enables a consumer to effortlessly control these home apparatuses through the web. The undertaking proposes a capable usage for IoT utilized for checking and controlling the home apparatuses by means of World Wide Web. Home robotization framework utilizes the reasonable gadgets as a UI. They can likewise speak with home computerization organize through an Internet access, by strategies for low power correspondence traditions like Zigbee, Wi-Fi, etc. This endeavor goes for controlling home machines by methods for Smartphone using Wi-Fi as correspondence tradition and raspberry pi as server structure. The IoT based Monitoring and Controlling System for home is a progression which can control and screen gadgets not just for home mechanization but any real life appliances remotely. It provides facility to have control over a wide range of home appliances and ensure securities.

In this project we presented implementation of home automation system through the Wi-Fi module, Massachusetts Institute of Technology (MIT) app. and Webpage server using ESP32. This project monitors all home appliances such as light, fan and controlled based on the threshold value programmed in the ESP 32. The System is low cost, allowing additional home appliances. Home monitoring and device controlling without involvement of humans the system can be control the devices, So that we can save the time and energy levels. So now we have introducing this system. The fig.1 shows the architecture of the system here we are using the four sensors and four devices for the home appliances for monitoring and controlling devices for the home respectively. The data can be sending to open source cloud storage for the store the data and use the MIT app Inventor for display the status of the sensors

II. LITERATURE SURVEY

1] Internet of Things Based Home Monitoring and Device Control Using Esp32.
Authors: V. Pravalika, Ch. Rajendra Prasad

Description: the authors presented design and development of control of home appliances system through the Wi-Fi module, webpage server and Arduino.

The user communicates with arduino through internet via Wi-Fi network. In Based on SMS/GPRS cell phone and inserted module including oneself sorted out home computerization framework, it tends to be coordinated to permit the client end to screen and control the gadgets for the home apparatuses by means of sent the message however the portable phone.

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Real Time Face Mask and Temperature Detection with Alert System

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Professor, Computer Department, SPCOET Someshwarnagar College, Baramati, India[1]

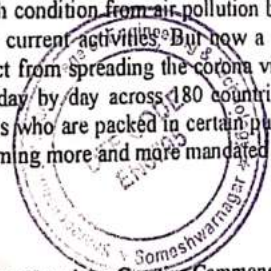Student, Computer Department Someshwarnagar College, Baramati, India[2]

Student, Computer Department Someshwarnagar College, Baramati, India[3]

Abstract: Last years of COVID shows that mask-wearing is a important thing in stopping the COVID-19 spreading. By the time of this article, most states have recover from COVID pandemic but mask wearing is needed for personal safety of person. So, real-time face mask and temperature detection becomes an essential application to prevent the spread of the pandemic as well as other viral infection. This study will present a face mask and temperature detection system that can detect and monitor mask-wearing and temperature from camera and gives alert when the person is not wearing mask. Using SVM and CNN algorithm we can detect the person is wearing mask or not. Increasing number of cases all over the world, this system is replace humans to check masks on the faces of people is needed and also detection of temperature is needed. This system fulfil all those need. Our system can be used in public places like airport entry and railway station. This system is very useful in many companies where there are lot of peoples are worked .We have used basic concepts of convolutional neural network algorithm to state the mask wearing position .Results shows that our model performs well on the test data with 100 percent and 99 percent precision and recall, respectively. Our system will be python and machine learning based .Our system is very helpful there because it is worked on real time and gives output in seconds and will very easily find the people who are not wearing the mask or not and gives the temperature of person if he or she is wearing mask .If the person is not wore the mask the system gives alert message. This system saves the precious time of person because it is work on real time bases.

Keywords: Machine Learning, SVM Algorithm, CNN Algorithm ,python ,face mask detection, temperature detection ,alert system

INTRODUCTION

According to recent research on COVID-19, every 10% increase in mask-wearing means the spread of virus is decreased which results the stopping the breakout in a community and other public places. Wearing the face mask is important and essential. At the time of this article, most states in tall over the world have wear the mask before they are going to public places. The face mask detector is an algorithm that finds the mask-wearing status of a person. Using a face mask detector we can easily find out the person is wearing mask or not .If the person is wearing mask then it also detect the temperature of person. If the person is not wore the mask then our system gives alert .Benefit of our system is it does not require humans to detect the person is wearing mask or not. The applications of face mask detection makes it a popular research topic. A popular algorithm for face mask detection is the SVM and CNN. This algorithms are useful for detecting the face mask position .Another benefit of our system is it gives result in seconds.If the person is wearing the mask our system also detect the temperature of that person and if the person is not wore mask then our system gives alert .The CNN algorithm is used for image recognition. It has many features like it require less training parameters .The SVM algorithm is used for face detection .This is one of the most important application of machine learning Nowadays there is a great use of face masks publically due to the increase of the number of Covid19 cases as well as other viral infections which is reported in around the world. From a recent survey, we came to know that people don't wear a face mask to protect their health condition from air pollution but rather they use to hide their emotions from the general public who try to watch their current activities. But now a day it is becoming very mandatory for each and everyone to wear a facemask to protect from spreading the corona virus and other viral infections from one person to another.. This infection is increased day by day across 180 countries. This virus ond other viral infection is mainly spread through close contact of persons who are packed in certain public areas or inside a closed room through the air. Hence the usage of face masks is becoming more and more mandated to prevent the fast-spreading of this virus disease.

"Survey Paper On Crop Recommendation System For Precision Agriculture In ML"

Prof .Shah S.N[1], Kharade Rohit[2], Kumbhar Omkar[3]

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Abstract: India is agricultural country in India there are many farmers. but still it has very less productivity. crop recommendation or prediction system used to predict suitable crop on the basis of input provided by user such as moisture, PH level, NPK values, Temperature, rainfall.to build model we use supervised ML algorithms such as Logistics regression, Random Forest, decision trees etc.

Keywords: Machine Learning, SVM Algorithm, Random Forest, Logistic Regression, Anaconda

I. INTRODUCTION

India is agricultural country in, India there are many farmers but they have low productivity. we reduces that problem we a ML that can recommend crop on the basis of soil constraint such as(NPK values ,rainfall ,PH level).Precision agriculture is the technology which can recommend crops using various ML algorithms random forest ,decison tree,Logistic regression..Precision agriculture is the technology of "site-specific" farming. it provides output on the basis of input provide user. Although precision agriculture has delivered better improvements it is still facing certain issues.in order to resolve issues regarding crop selection.

The "site-specific" technique has improved the results yet there is a need to supervise the results of such systems. Not all precision agriculture systems provide accurate results. But in agriculture it is important that the recommendations made are accurate and precise because incase of errors it may lead to heavy material and capital loss.

II. LITERATURE SURVEY

1. **Paper name:** Crop Recommendation System for Precision Agriculture
   Author: Ying Zhu, MS, Geoffrey S. Young, MD, Zhong Xue, PhD, Raymond Y. HuanS.Pudumalar*, E.Ramanujam*, R.Harine Rajashree´n, C.Kavya´n, T.Kiruthika´n, J.Nisha´n.

Data mining is the practice of examining and deriving purposeful information from the data. Data mining finds its application in various fields like finance, retail, medicine, agriculture etc. Data mining in agriculture is used for analyzing the various biotic and abiotic factors. Agriculture in India plays a predominant role in economy and employment. The common problem existing among the Indian farmers are they don't choose the right crop based on their soil requirements. Due to this they face a serious setback in productivity. This problem of the farmers has been addressed through precision agriculture. Precision agriculture is a modern farming technique that uses research data of soil characteristics, soil types, crop yield data collection and suggests the farmers the right crop based on their site 6 "Crop Recommendation System For Precision Agriculture In ML.."

2. **paper name:** Crop Recommendation System to Maximize Crop Yield using Machine Learning Technique
   Author: Rohit Kumar Rajak1, Ankit Pawar2, Mitalee Pendke3 , Pooja Shinde4, Suresh Rathod5, Avinash Devare

Agriculture in India plays a major role in economy and employment. The common difficulty present among the Indian farmers are they don't opt for the proper crop based on their soil necessities. Because of this productivity is affected. This problem of the farmers has been solved through precision agriculture. This method is characterized by a soil database collected from the farm, crop provided by agricultural experts, achievement of parameters such as soil through soil testing lab dataset. The data from soil testing lab given to recommendation system it will use the collect data and do ensemble
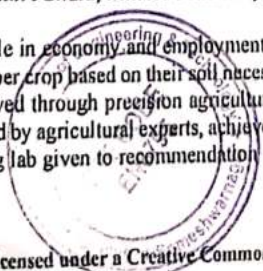
SURVEY PAPER ON DEVELOPMENT OF TOUR GUIDE APP

Prof.Shah S.N[1], Shinde Avishkar[2], Lonkar Yash[3]

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Abstract: As technology is growing immensely in recent years, travel is one of the top three sectors are disrupted by technology. Travelling apps are taking center stage in the mobile app development. In today's market, there are different apps with various functions. As an example, Google maps for maps and locations, another is trivago for hotels and so on. In this project we will build a tour guide app. This app will provide the information about tourist places and nearby place recommendations such as hotels, hospitals and also give brief information about the places. We will also sort the places into season wise and category wise, like hill stations, temples, forts etc. We are implementing all the functions of different apps in one app. Thus, the name tour guide app.

Keywords: Travel Guide, Android App, Interest wise, Season wise Hotel finder, Helpline.

I.INTRODUCTION

The main idea and motive of the project is to develop an android application. Which helps to the travellers for finding the tourist place to visit. The travellers take long time which waste on searching for the better place by switching to different apps for information of tourist places and the a map was used for finding location and such a application for the hotel rooms. So our motive is that to make an android application for all information at one place about tourist places, hotels, and provide nearby helpline numbers of hospitals and police stations. The project is about tour guide system that a tourist will get best use of the application according to their interest. The purpose of our application is to provide thebasic idea and information about some different places that the travellers need to know at the time of visit or before the visit.

II. PROBLEM STATEMENT

The main problem of frequent traveller who is travelling frequently needs an application but due to switching to different apps it becomes difficult and takes lots of time for the traveller and it spoils the mood. So we get to know the need of them they wanted an app which has the various functionality of all various travel apps does in the market today. The motive of the project is to do develop an android app that helps traveller on his journey. The purpose of our project is to provide the basic idea on some common conversation and the information in the different places that the travellers need to know that place. Especially in this application, the interaction between users is the new function compared to traditional travel. Our app is to easy to use and efficient to manage the tour activities.

III. LITERATURE SURVEY

A literature review is a text of a scholarly paper, which includes the current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic. Literature reviews use secondary sources, and do not report new or original experimental work.

1. **Paper name:** TRAVEL GUIDE ANDROID APPLICATION

Author: Syed Zishan Ali, Bhoomika Kapde, Kanchan Poptani, Siddhant Ogale

The motive of this android application is to manage a tour for the users through mobile computing with complete requirements and needs in location. The default categories are provided to help user plan their trip efficiently. The

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A survey report on: Detecting A diseases of plants using machine learning

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Abstract: Plant disease detection is an Innovative and Enlightening System helping the users to know the disease, trainings or any interesting things taking place around their Area. This Organization aids the native community to keep themselves up to date about the events around their locality or zone or in their town. There are 2 things for this method to work; one for the image processing and another is machine learning.

Modern approaches such as machine learning and deep learning algorithm have been employed to increase the recognition rate and the accuracy of the results. Random forests are as a whole, learning method for classification, regression and other tasks that operate by constructing a forest of the decision trees during the training time. Unlike decision trees, Random forests overcome the disadvantage of over fitting of their training data set and it handles both numericand categorical data.

The histogram of oriented gradients (HOG) is an element descriptor utilized as a part of PC vision and image processing for the sake of object detection. Here we are making utilization of three component descriptors:

Keywords: Machine Learning, Image processing, Random Forests, HOG, Object detection, Histogram graph

INTRODUCTION

Plant disease detection is an Innovative and Enlightening System helping the users to know the disease, training or any interesting things taking place around their Area. This Organization aids the native community to keep themselves up to date about the events around their localityor zone or in their town. There are 2 things for this method to work; one for the image processing and another is machine learning.

The user is permitted to sight the disease only of his town while user can supplement disease connected to any town. Admin will show if any misuse or inappropriate or false disease added by any users and will take specific act. The Front end used is Android Studio and backend as SQLServer. The user has to record into the system to using this app and can bring up-to-date his details as well.The healthy leaf is shown first and so on, the user can also restore the disease resultant the latest one shown first and current disease will be shut. The user can add a image and a title connected to the leaf.

The user can use only 500 words to give a lecture on disease. The Appearance and texture of evaluation the disease is thrilling and amazing as the system offers swipe to move to the next or earlier disease with transition properties. The agriculturist in provincial regions may think that it's hard to differentiate the malady which may be available in their harvests. It's not moderate for them to go to agribusiness office and discover what the infection may be. Our principle objective is to distinguish the illness introduce in a plant by watching its morphology by picture handling and machine learning.

LITERATURE SURVEY

A literature review is a text of a scholarly paper, which includes the current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic. Literature reviews use secondary sources, and do not report new or original experimental work.

1.Paper name: "A Cotton Leaf Disease Identification using Pattern Recognition Techniques"
Author: P. R. Rothe and R. V. Kshirsagar

which Uses snake segmentation, here Hu's moments are usedas distinctive attribute. Active contour model used to limit the vitality inside the infection spot, BPNN classifier tackles the numerous class problems. The average classification is found to be 85.52%.
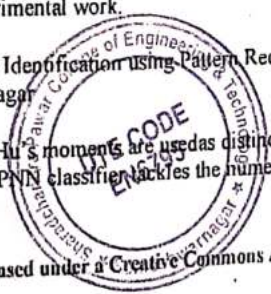
"Survey Paper on COVID Vaccination Detection Using Aadhar QR Code"

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Abstract: Now these days, a QR code is applied in different application streams related to marketing, security, academics etc. Day by day more people are getting aware of this technology and use it accordingly. The popularity of QR code grows rapidly with the growth of smartphone users and thus the QR code is rapidly arriving at high levels of acceptance worldwide. Identification of objects and places in the real world is very important, and QR (2-D printing) code is useful to store identifiers of them. Any camera cell phone device capture function can read content from a barcode tag directly.

Keywords: Machine Learning, Reed Solomon Method, Quick response code(QR),Mobile application scanner, Smart phone.

I. INTRODUCTION

In this project we generate Aadhar QR Code using python to detect which person is vaccinated or not and how many doses he was taken. QR code is a type of matrix bar code or two-dimensional code that can store data information and designed to be read by smartphones. QR stands for "Quick Response" indicating that the code contents should be decoded very quickly at high speed. The code consists of black modules arranged in a square pattern on a white background. The information encoded may be text, a URL or other data.

Types of QR Codes:

1. QR model 1 and 2:

QR Codes are categorized into five broad categories. The original QR Code is QR Code Model 1, a code capable of coding 1,167 numerals with its maximum version being 14 (73 x 73 modules). QR Code created by improving Model 1 so that this code can be read smoothly even if it is distorted in some way. QR Codes that are printed on a curved surface or whose reading images are distorted due to the reading angle can be read efficiently by referring to an alignment pattern embedded in them. This code can encode up to 7,089 numerals with its maximum version being 40 (177 x 177 modules).

2. Micro QR Code:

A major feature of Micro QR Code is it has only one position detection pattern, compared with a regular QR Code that require a certain amount of area because position detection patterns are located at the three corners of a symbol.

3. Logo QR Code:

The Logo QR Code is a novel type of QR Code created to enhance visual recognizing-ability by blending it with letters and pictures infull color.

4. iQR Code:

iQR Code is a matrix-type 2D code, allowing easy reading of its position and size. This code allows a wide size range of codes from ones smaller than the traditional QR Code and Micro QR Code to large ones that can store more data than these. This code can be printed as a rectangular code, turned-over code, black-and-white inversion code or dot pattern code (direct part marking as well, leaving a broad range of applications in various areas.

1

Heart Disease Prediction Using Machine Learning

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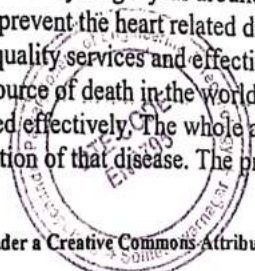Student ,Computer Department Someshwarnagar College , Baramati , India

ABSTRACT

In recent times, Heart Disease prediction is one of the most complicated tasks in medical field. In the modern era, approximately one person dies per minute due to heart disease. Data science plays acrucial role in processing huge amount of data in the field of healthcare. As heart disease prediction is a complex task, there is a need to automate the prediction process to avoid risks associated with it and alert the patient well in advance. This paper makes use of heart disease dataset available in UCI machine learning repository. The proposed work predicts the chances of Heart Disease and classifies patient's risk level by implementing different data mining techniques such as Naive Bayes , Decision Tree, Logistic Regression and Random Forest. Thus, this paper presents a comparative study by analysing the performance of different machine learning algorithms. The trial results verify that Random Forest algorithm has achieved the highest accuracy of 90.16% compared to other ML algorithms implemented.

KEYWORDS

Machine Learning Decision Tree, Naive Bayes, Logistic Regression,Random Forest, Heart Disease Prediction.

INTRODUCTION

The work proposed in this paper focus mainly on various data mining practices that are employed in heart disease prediction. Human heart is the principal part of the human body. Basically, it regulates blood flow throughout our body. Any irregularity to heart can cause distress in other parts of body. Any sort of disturbance to normal functioning of the heart can be classified as a Heart disease. In today's contemporary world, heart disease is one of the primary reasons for occurrence of most deaths. Heart disease may occur due to unhealthy lifestyle, smoking, alcohol and high intake of fat which may cause hypertension . According to the World Health Organization more than 10 million die due to Heart diseases every single year around the world. A healthy lifestyle and earliest detection are only ways to prevent the heart related diseases. The main challenge in today's healthcare is provision of best quality services and effective accurate diagnosis . Even if heart diseases are found as the prime source of death in the world in recent years, they are also the ones that can be controlled and managed effectively. The whole accuracy in management of a disease lies on the proper time of detection of that disease. The proposed work makes an attempt to

"Survey Paper on Flight Ticket Price Prediction Using Machine Learning"

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Abstract: Flight ticket price is the continuously changing data which varies every day. Depending on the various factors that affect it directly or indirectly. we cannot say that the price of flight ticket fare remains the same or not. It is quite a tough task to predict the flight ticket fare. It may change throughout the week, month or some days, but it can be predicted nearly accurate to the actual flight ticket price. We can say that todays flight ticket price which is different from tomorrows flight ticket price to solve this problem we can predict accurate flight ticket price for various airline with various cities.

Nowdays many of people not aware of buying flight ticket also many of people pay more amount for buying flight ticket.The flight ticket price are totally depends upon season like summer,winter and festival.So our system helps to predict flight ticket price before people buying flight ticket.

Keywords: Machine Learning, Random Forest Regressor, Jupyter, Pycharm, etc.

I. INTRODUCTION

Nowadays, the airline corporations are using complex algorithms for the flight ticket price calculations. This highly complicated methods makes the flight ticket price difficult to guess for the customers, since the price changes dynamically.It is difficult for airlines to maintain prices since price change dynamically due to different conditions.That's why we will try to use machine learning to solve this problem.This can help airline by predicting what prices they can maintain.It can also help customers to predict future flight prices and plan their journey accordingly.

- **Input features-:**
  1. Airline -: It contains various types of airlines like Indigo, Jet airways, Air India and many   more.
  2. Date of journey -: In this column will let us know about the date on which the passengers journey will Start
  3. Source-: Source holds the name of the place from where the passengers journey   will start.
  4. Destination-: The destination holds the name of the place to where passengers wanted to travel.
  5. Route-: Here we can know about that what is the route through which passengers have opted to travel from his/her sources to their destination
  6. Arrival Time-: Arrival time is when the passengers will reach his/her destination.
  7. Duration-: The duration is the whole period that flight will take to complete its journey from source to destination.
  8. Stops-:This will let us know in how many places flights will stop there for the flight in the whole journey.
 9. Price-:Price of the flight for a complete journey including all the expenses before onboarding.

By inputting these features we get the estimated price.

II. LITERATURE SURVEY

1.Paper name: A Framework For Airfare Price Prediction:A Machine Learning Approach
   Author: Tianyi Wang*, Samira Pouyanfar*, Haiman Tian*, Yudong Tao†,
Miguel Alonso Jr.*, Steven Luis* and Shu-Ching Chen*
       The proposed framework combine two databases by using ML algorithm to model the quarterly average ticket price based on different origin and destination.

2.paper name: Airfare Price Prediction Using Machine Learning Algorithm
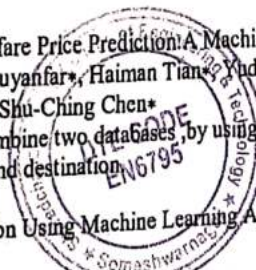
Pune House Price Prediction Using Machine Learning

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Abstract:Machine Learning plays a virtual role from past years in normal speech command, product recommendation as well as in medical field also. Instead of this it provides better customer services and safer automobile system. This all of things shows that ML is trending technology in almost all fields so we are trying to coined up ML in our project. Nowadays the real estate market is a standout amongst the most focused regarding pricing and keep fluctuating. People are looking to buy a new home with their budgets and by analysing market strategies. But main disadvantage of current system is to calculate a price of house without necessary prediction about future market trends and result is price increase

Keywords: Machine learning, Data Preprocessing, Linear Regression, Jupiter Notebook, Pycharm

I. INTRODUCTION

People are careful when they are trying to buy a house with their budgets and market strategy. The price of house may depend on a wide variety of factors ranging from the house's location, its features as well as the property demand and supply in the real estate market the housing market is also one crucial element of the national economy. There forecasting housing values in not only beneficial for Buyers but also real estate agents. Idea behind this project is to help buyers and sellers to estimate real estate price for there future planning according their budget and requirements it'll help the seller to estimate the selling cost of a house perfectly and to help people to predict the exact price to accumulate a house.

II. LITERATURE SURVEY

1 house price prediction using linear regression ML Umang Agarwal, Smriti Kumari Gupta, Madhav Goyal

2 House price prediction using machine learning Anand G. Rawool, Dattatray v. Rogye, Sainath G. Rane, Dr. Vinayak A. Bharadi

3 House price forcasting using Data Mining techniques Atharva chogle , priyanka khaire , Akshata gaud , Jinal Jain

4 House price prediction using machine learning Robart Konwar, Angshuman Kakati , Bhagyashree Das , Divyansh Borah Shah , Dr. Monoj Kumar Muchahari

A Survey on: Credit card fraud detection system using machine learning.

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Abstract

Now a day the usage of credit cards has dramatically increased. As credit card becomes the most popular mode of payment for both online as well as regular purchase, cases of fraud associated with it are also rising. In this paper, we model the sequence of operations in credit card transaction processing using a Hidden Markov Model (HMM), and show how it can be used for the detection of frauds. An HMM is initially trained with the normal behavior of a cardholder. If an incoming credit card transaction is not accepted by the trained HMM with sufficiently high probability, it is considered to be fraudulent. At the same time, we try to ensure that genuine transactions are not rejected. We present detailed experimental results to show the effectiveness of our approach and compare it with other techniques available in the literature.

Keywords— Credit card fraud, Applications of machine learning, Hidden Markov Model(HMM), Waterfall model,Automated fraud detection.

I. INTRODUCTION

'Fraud' in credit card transactions is unauthorized and unwanted usage of an account by someone other than the owner of that account. Necessary prevention measures can be taken to stop this abuse and the behaviour of such fraudulent practices can be studied to minimize it and protect against similar occurrences in the future.In other words, Credit Card Fraud can be defined as a case where a person uses someone else's credit card for personal reasons while the owner and the card issuing authorities are unaware of the fact that the card is being used. Fraud detection involves monitoring the activities of populations of users in order to estimate, perceive or avoid objectionable behaviour, which consist of fraud, intrusion, and defaulting. This is a very relevant problem that demands the attention of communities such as machine learning and data science where the solution to this problem can be automated. This problem is particularly challenging from the perspective of learning, as it is characterized by various factors such as class imbalance. The number of valid transactions far outnumber fraudulent ones. Also, the transaction patterns often change their statistical properties over the course of time.

[...]ect of presence of holes locations and size on spring back in U bent [...]mponents

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[A]bstract

The automotive industry is widely uses the forming processes. Springback is a significant issue associated with forming processes. Springback is caused because of elastic stresses present in bent areas. These residual elastic stresses try to get relieved when the punch is retracted it causes the movement of the formed-up parts called springback. In this paper, the effect of holes on sheet metal components (such as base, corner, and sidewall of the U shape component) and the spring back is investigated. The results obtained by finite element analysis (FEA) are compared with the experimental results. Further, the size of [...] hole in the base wall of the U shape component on the springback is studied. For all locations of holes, i.e. the hole in the base wall, corner, and sidewall, a decrease in the springback is observed. But the presence of a hole in side wall has shown more decrease in springback as compared with hole in the base wall and corner and also, with an increase in the size of the hole the decrease in springback is observed.

Keywords

Forming; Spring back; FEA; Hole in component; Hole location

Recommended articles

Data availability

Data will be made available on request.

Development of the Al12SiCuFe Alloy Foam Composites with ZrSiO4 Reinforcements at Different Foaming Temperatures

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Abstract: Lightweight aluminum composite is a class of foam material that finds many applications. These properties make it suitable for many industries, such as the transportation, aerospace and sports industries. In the present work, closed-cell foams of an Al-Si12CuFe alloy and its composite are developed by a stir casting process. The optimization of the foaming temperature for the alloy and composite foams was conducted in terms of the ligament and node size of the alloy and also the volatility of the zircon with the melt, to provide strength to the cell walls. CaCO3 as a blowing agent was homogeneously distributed in the molten metal without adding any thicker to develop the metal foam. The decomposition rate of CaCO3 is temperature-dependent, which is attributed to the formation of gas bubbles in the molten alloy. Cell structure, such as cell size and cell wall thickness, is controlled by manufacturing process parameters, and both the physical and mechanical properties are dependent on the foam cell structure, with cell size being the major variable. The results show that the increase in cell wall thickness with higher temperature leads to a decrease in cell size. By adding the zircon to the melt, the cell size of the composite foam first increases, and then the thickening of the wall occurs as the temperature is increased. The uniform distribution of the blowing agent in molten metal helps in the formation of a uniform cell structure. In this work, a comparative structural study of alloy foam and composite foam is presented regarding cell size, cell shape and foam stability at different temperatures.

Keywords: cell structures; ceramics; high temperature; viscosity; reinforcement

1. Introduction

Metallic foams in some applications exhibit superior properties as compared to metals. Because of their exceptional buckling and impact resistance, these materials are used as sound absorbers and building materials and also in different transport structures [1–3]. However, the properties of metal foams are controlled by manufacturing conditions and cell shape in the structure, because cell morphology affects mechanical properties [4–6]. Lightweight aluminum and its alloy are not currently being used with steel in the same way as any other metal, so its production continues to grow. Its physical character makes it an ideal candidate for a variety of applications in industries such as packaging, transportation, construction and aerospace[6]. Closed-cell foams do not have interconnected pores. The closed-cell foams normally have higher compressive strength due to their structures. Liquid