R.V.R & J.C. COLLEGE OF ENGINEERING (AUTONOMOUS):: GUNTUR – 522019
DEPARTMENT OF COMPUTER SCIENCE & ENGIEERING
FACULTY RESEARCH AND PUBLICATIONS INFORMATION

Consolidated report of faculty publication:

Year	Journals	Conferences	Total
2020-2021	23	6	29
2021-2022	30	1	31
2022-2023	28	7	35
2023-2024	18		18

Consolidated report of Indexing:

Year	SCI	WOS	Scopus	Total
2020-2021		3	20	23
2021-2022	0	15	4	19
2022-2023	6	1	20	27
2023-2024	6		15	21

S.No	Name(s)	Vidwan	Scopus	Publons	Google Scholar	Research Gate
1	Dr.M.SreeLatha	https://vidwan.inflibnet.ac.in/profile/187025	https://www.scopus.com/authid/detail.uri?authorId=35235158600	https://publons.com/researcher/4114465/m-sreelatha/	https://scholar.google.com/citations?user=cUzGUZcAAAAJ&hl=en	https://www.researchgate.net/profile/Moturi_Sreelatha
2	Dr.A.SriNagesh	https://vidwan.inflibnet.ac.in/profile/186285	https://id.elsevier.com/settings/redirect?code=iwuTMTXnCxrbx672NRIqN7xHczaZppOBJ8ZkfI4	https://publons.com/researcher/2097768/srinagesh-ayyagari/	https://scholar.google.com/citations?hl=en&user=lExkbecAAAAJ&view_op=list_works&gmla=AJsN-	https://www.researchgate.net/profile/Ayyagari_Srinagesh2

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					F6s03S9hJbmRd54vtlCgVwS27WywRfcaTljp96dPSss8sHluxiULcy5Qpa-EA4_PxP883hqkfqDvZ9XxUx_hm9sq2WfKg	
3	Dr.Ch.Aparna	https://vidwan.inflibnet.ac.in/profile/185583	https://www.scopus.com/authid/detail.uri?authorId=57201858994	https://publons.com/researcher/4106564/aparna-chaparala/	https://scholar.google.com/citations?user=jH-KlmYAAAAJ&hl=en&authuser=3	https://www.researchgate.net/profile/Aparna_Ch2
4	Sri.Ch.RatnaBabu	https://vidwan.inflibnet.ac.in/profile/186621	https://id.elsevier.com/settings/redirect?code=0_y-dXM3Dr_5r9S6OjYjVUN2-E0uGLJS9MkfKyQD#	https://publons.com/researcher/4113888/chekka-ratna-babu/	https://scholar.google.com/citations?user=A5jo8uMAAAAJ&hl=en	https://www.researchgate.net/profile/Chekka_Ratna_Babu
5	Sri.M.Srikanth	https://vidwan.inflibnet.ac.in/profile/186081	https://www.scopus.com/authid/detail.uri?authorId=57204501425	https://publons.com/researcher/4109654/srikanth-meda/publications/	https://scholar.google.com/citations?hl=en&user=htzqtqoAAAAJ	https://www.researchgate.net/profile/Srikanth_Meda/research
6	Sri.B.VaraPrasad Rao	https://vidwan.inflibnet.ac.in/profile/186979	https://id.elsevier.com/settings/redirect?code=SVQnQOeGh3-cY1qdtBBHLIdNiwpGWgnd0M1bfeb0	https://publons.com/dashboard/records/publication/import/	https://scholar.google.co.in/citations?user=NS4gXHAAAAAJ&hl=en	https://www.researchgate.net/profile/Boyapati_Varaprasad_Rao
7	Dr.R.LakshmiTulasi	https://vidwan.inflibnet.ac.in/profile/186010	https://www.scopus.com/authid/detail.uri?authorId=56422406600	https://publons.com/researcher/4109128/lakshmi-tulasi-r/	https://scholar.google.com/citations?user=Jihr7uwAAAAJ&hl=en	https://www.researchgate.net/profile/Lakshmi_Ravulapalli
8	Sri.K.Siva Kumar	https://vidwan.inflibnet.ac.in/profile/186945	https://www.scopus.com/authid/det	https://publons.com/researcher/4	https://scholar.google.co.in/citations?user=QuireukAAA	https://www.researchgate.net/profile/

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FACULTY RESEARCH AND PUBLICATIONS INFORMATION

			ail.uri?authorId=57832933600	116006/kommerla-siva-kumar/	AJ&hl=en	Kommerla_Siva_Kumar2
9	Sri.E.Ramesh	https://vidwan.inflibnet.ac.in/profile/123427		https://publons.com/researcher/4111571/ramesh-eluri/	https://scholar.google.co.in/citations?user=cIbx8yYAAAAJ&hl=en	https://www.researchgate.net/profile/Ramesh_Eluri
10	Smt.M.Vasavi	https://vidwan.inflibnet.ac.in/profile/185972		https://publons.com/researcher/4109130/mandadi-vasavi/	https://scholar.google.com/citations?hl=en&user=IjX-KYYAAAAJ	https://www.researchgate.net/profile/Mandadi_Vasavi
11	R.MabuBasha	https://vidwan.inflibnet.ac.in/profile/186615		https://publons.com/researcher/4113856/mabu-basha/	https://scholar.google.com/citations?user=GhMs1w0AAAAJ&hl=en	
12	Sri.P.Siva Prasad	https://vidwan.inflibnet.ac.in/profile/186001	https://www.scopus.com/authid/detail.uri?authorId=57215094178	https://publons.com/researcher/4111494/pulicherla-siva-prasad/	https://scholar.google.com/citations?hl=en&user=w8IbkF4AAAAJ	https://www.researchgate.net/profile/Pulicherla_Siva_Prasad
13	Sri.M.Brahmaiah	https://vidwan.inflibnet.ac.in/profile/186116		https://publons.com/researcher/4109630/brahmaiah-madamanchi/	https://scholar.google.com/citations?user=MO0x-YQAAAAJ&hl=en	https://www.researchgate.net/profile/Madamanchi_Brahmaiah2
14	Ms.Ch.V.Madhavi Lakshmi	Profile URL: https://vidwan.inflibnet.ac.in/profile/187103	https://id.elsevier.com/settings/redirect?code=hhfB-PcVjlxnOi4Yh7qp7Wu7iZxFmqm4xg0fKyQD	https://publons.com/researcher/4116416/challa-vijaya-madhavi-lakshmi/	https://scholar.google.com/citations?user=ll8tSmYAAAAJ&hl=en	https://www.researchgate.net/profile/Vijaya_Lakshmi44
15	Smt.S.J.R.K.PadminiValli.V	https://vidwan.inflibnet.ac.in/profile/186055		https://publons.com/researcher/4109391/s-j-r-k-padminivalli-v/	https://scholar.google.com/citations?user=0YaGJWsAAAAJ&hl=en	
16	Smt.Z.Sunitha Bai	https://vidwan.inflibnet.ac.in/profile/186686		https://publons.com/researcher/4109644/zarapala-	https://scholar.google.com/citations?hl=en&user=3JNAQ	https://www.researchgate.net/profile/Sunitha_Bai

R.V.R & J.C. COLLEGE OF ENGINEERING (AUTONOMOUS):: GUNTUR – 522019
DEPARTMENT OF COMPUTER SCIENCE & ENGIEERING
FACULTY RESEARCH AND PUBLICATIONS INFORMATION

				sunitha-bai/	mYAAAAJ	
17	Sri.G.S.Raghavendra	https://vidwan.inflibnet.ac.in/profile/184811		https://publons.com/researcher/4109506/g-s-raghave	https://scholar.google.com/citations?user=VuyGrlwAAAAJ&hl=en	
18	Ms. B.Manasa	https://vidwan.inflibnet.ac.in/profile/186329		https://publons.com/researcher/4111435/bezawada-manasa/	https://scholar.google.com/citations?hl=en&user=4enVdW4AAAAJ	https://www.researchgate.net/profile/Bezawada_Manasa
19	Sri.P.Rama Krishna	https://vidwan.inflibnet.ac.in/profile/186260	https://www.scopus.com/dashboard.uri?origin=userDashboard&zone=TopNavBar	https://publons.com/researcher/4110257/rama-krishna-paladugu/	https://scholar.google.com/citations?user=lVmvcsAAAAJ&hl=en	https://www.researchgate.net/profile/Rama-Krishna-Paladugu
20	Sri.M.Naveen	https://vidwan.inflibnet.ac.in/profile/185962		https://publons.com/researcher/ABH-5220-2020/	https://scholar.google.com/citations?hl=en&user=R1fff7QAAAAJ	https://www.researchgate.net/profile/Naveen_Mukkapati2
21	Smt.N.Zareena	https://vidwan.inflibnet.ac.in/profile/186958		https://publons.com/researcher/4116043/zareena-noorbasha/	https://scholar.google.com/citations?user=6E-OX98AAAAJ&hl=en	https://www.researchgate.net/profile/Zareena_Noorbasha
22	Sri.S.Karthik	https://vidwan.inflibnet.ac.in//profile/186171/MTg2MTcx		https://publons.com/researcher/4110070/sajja-karthik/	https://scholar.google.com/citations?hl=en&user=SL2mJr0AAAAJ	https://www.researchgate.net/profile/Sajja_Karthik
23	Maithili Medikonduru					
24	Nimmagadda Chandra Sekhar					

R.V.R. & J.C. COLLEGE OF ENGINEERING(A):: GUNTUR-522019

DETAILS TO BE SUBMITTED FOR RESEARCH COMMITTEE

2023-2024

RESEARCH PAPERS PUBLISHED BY FACULTY MEMBERS IN JOURNALS/BOOK CHAPTERS:

S.NO	Journals -Conferences	Total
1	International Journals	19
2	International Conferences	

Indexing	SCI	WOS	Scopus
	6		16

1. Publication Details:

S.NO	Name of the Faculty	Title of the publication	Title of the Journal	Volume(issue), Page No	ISSN no	Month & Year	WOS	Scopus	SCI/SCIE	others
1.	Padminivalli V, S.J.R.K., M.V.P.Chandrasekar Rao	Sentiment based emotion classification in unstructured textual data using dual stage deep model	Multimedia Tools Applications	Volume 83, pages 22875–22907		09 August 2023		✓	✓	
2.	Dr.MSreelatha	Land Cover Change Detection Based on Lenet-5 by Using Very-High-Resolution Remote Sensing Images	IETE Journal of Research			12 Oct 2023			✓	
3. .	Dr.MSreelatha	Semantic land cover change detection using harDNet and dual path coronet	International Journal of Remote Sensing	Volume 44, 2023 - Issue 24, Pages 7857-7875		12 Dec 2023			✓	
4.	Dr.MSreelatha	V-BANet: Land cover change detection using effective deep	Ecological Informatics	Volume 75, ,		July 2023			✓	

		learning technique								
5.	ZarapalaSunitha Bai1 , SreelathaMalempati	Ensemble Deep Learning (EDL) for Cyber-bullying on Social Media	International Journal of Advanced Computer Science and Applications	Vol. 14, No. 7, 2023		2023		✓		
6.	Dr.B.VaraPrasadaRao RatnaBabuChekka	A Broad Review on Different Imbalanced Dataset Classification Approaches	International Journal ofINTELLIGENT SYSTEMS AND APPLICATIONS IN ENGINEERING	Vol.11(4), 27–40	ISSN:2147-6799	05/08/2023		✓		
7.	Dr.B.VaraPrasadaRao	Exploration Beyond Boundaries: AI-Based Advancements in Rover Robotics for Lunar Missions Space Like Chandrayaan	International Journal ofINTELLIGENT SYSTEMS AND APPLICATIONS IN ENGINEERING	Vol: 11(10s), 640 –648	ISSN:2147-67992	25/07/2023		✓		
8. .	Rama Krishna Paladugu	Harnessing Deep Learning Techniques for Text Clustering and Document Categorization	International Journal on Recent and Innovation Trends in Computing and Communication	Volume: 11 Issue: 8,pages 125-130	ISSN: 2321-8169	28July 2023		✓		
9. .	Dr.Ch.Aparna	Tracing footprints of anti-forensics and assuring secured data transmission in the cloud using an effective ECCDH and Kalman Filter	Journal of Network and computer Applications	Volume 221	ISSN 1084-8045	14 October 2023		✓	✓	
10.	Dr.SriNageshAyyagari	Suicidal ideation prediction based on social media posts using a GAN-infused deep learning framework with genetic optimization and word embedding fusion	International Journal of Information Technology			13th feb-2024		✓		
11.	Dr.SriNageshAyyagari	Enhancing Mental Health Awareness through Twitter Analysis: A Comparative Study	International Journal on Recent and Innovation Trends in Computing and	Volume: 11 Issue: 9	ISSN: 2321-8169	15September 2023		✓		

		of Machine Learning and Hybrid Deep Learning Techniques	Communication							
12.	M.MaithiliSaisree	Optimized Fuzzy C-Means (Fcm) Clustering For High-Precision Brain Image Segmentation And Diagnosis Using Dense-net Features	Journal of Theoretical and Applied Information Technology	Vol.101. No 24	ISSN: 1992-8645	31st December 2023.		✓		
13.	Dr.Ravulapalli Lakshmi Tulasi	Explainable extreme boosting model for breast cancer diagnosis	International Journal of Electrical and Computer Engineering	Vol. 13, No. 5, , pp. 5764~5769	ISSN: 2088-8708	October 2023		✓		
14.	Dr.MSreelatha	HC-MOTS: Heuristic Clustering And Multi-Objective Task Scheduling For Cloud Computing Environments	Journal of Data Acquisition and Processing	Vol. 38 (4) 2023	ISSN: 1004-9037	2023		✓		
15.	B.Manasa	REAL AND ACCURATE SPEECH ENHANCEMENT MODEL FOR ORTHOGONAL-DAUBECHIES BASED MULTIRESOLUTION ANALYSIS	Journal of the Balkan Tribological Association	Vol. 29, No 2, 161–167		July 2023		✓		
16.	S.Karthik	DesU-NetAM: optimized DenseU-Net with attention mechanism for hyperspectral image classification	International journal of information technology	Vol.15,pages 3761-3777		25th August 2023		✓		
17.	Padminivalli V, S.J.R.K., M.V.P.Chandrasekar Rao	Deep Aspect-Sentinet:Aspect based emotional sentiment analysis using hybrid Attention Deep learning Assisted Bi-LSTM	International journal of Uncertanity ,Fuzziness and knowledge –based systems	Vol.32,No:1		August 2023		✓	✓	
18.	Padminivalli V, S.J.R.K., M.V.P.ChandrasekarRao	Depth wise seperable convolution resent model for sentiment analysis in Amazon E-commerce websites	Journal of Theoretical and Applied Information Technology	Vol 102.No.1	ISSN:1992-8645	January 2024		✓		

19.	Dr. Venkateswara Rao Naramala	Enhancing Diabetic Retinopathy Detection Through Machine Learning with Restricted Boltzmann Machines	International Journal of Advanced Computer Science and Applications	Vol. 14, No. 9		2023		✓		

R.V.R.& J.C COLLEGE OF ENGINEERING(AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

Academic year :2022-2023

RESEARCH PAPERS PUBLISHED BY FACULTY MEMBERS IN JOURNALS/BOOK CHAPTERS:

S.NO	Journals -Conferences	Total
1	International Journals	28
2	International Conferences	7

Indexing	SCI	WOS	Scopus
	6	1	20

SNO	Title Of The Paper	Indexing
1.	N. D. S. S. KiranRelangi, AparnaChaparala, RadhikaSajja," Effective Groundwater Quality Classification using Enhanced Whale Optimization Algorithm with Ensemble Classifier", International Journal of Intelligent Engineering and Systems (IJIES) ISSN: 2185-3118, November 4, 2022.	scopus
2.	N. D. S. S. KiranRelangi, AparnaChaparala, RadhikaSajja," Identification of Potential Quality of Groundwater Using Improved Fuzzy C Means Clustering Method", Mathematical Modelling of Engineering Problems, Vol. 9, No. 5, October, 2022, pp. 1369-1377, https://doi.org/10.18280/mmep.090527.	scopus
3.	ChKavitha,M.BabuRao, B. Srikanth, A. SrinivasaRao, A. Sri Nagesh, K. Kranthi Kumar, "Zero shot image classification system using an optimized generalized adversarial network". Wireless Networks, 21 September 2022, https://doi.org/10.1007/s11276-022-03166-8.	scopus
4.	ZarapalaSunithaBai, SreelathaMalempati," An Enhanced Text Mining Approach using Ensemble Algorithm for Detecting Cyber Bullying", vol. 70, no. 9, pp. 393-399, 2022., https://doi.org/10.14445/22315381/IJETT-V70I9P240.	scopus
5.	TatireddySubba Reddy ,Sanjeevaiah K, SajjaKarthik, Mahesh Kumar and VivekD.,"Content-Based Image Retrieval Using Hybrid Densenet121-Bilstm and Harris Hawks Optimization	Web of science Scopus

	Algorithm",International Journal of Software Innovation (IJSI) 11(1),DOI: 10.4018/IJSI.315661,2023.	
6.	BezawadaManasa, P Venkata Krishna (2023). Comparative Study on Techniques Used for Anomaly Detection in IoT Data. International Journal of Computer Engineering In Research Trends, 10(4):pp.177-181,	
7.	Bai, Z.S., Malempati, S. (2023). An ensemble approach for cyber bullying: Text messages and images. Revue d'IntelligenceArtificielle, Vol. 37, No. 1, pp. 179-184. https://doi.org/10.18280/ria.370122	Scopus
8.	K.Arun, Dr.A. Srinagesh, " Preprocessing of Aspect-based "English Telugu Code Mixed Sentiment Analysis " Journal of Information Technology Management" Volume(15) Special Issue: Digital Twin Enabled Neural Networks Architecture Management for Sustainable Computing ' Pages: 150-163, March 2023.	SCI
9.	Ch R Prakasha Reddy, A Srinagesh "A Novel Method for Human MRI Based Pancreatic Cancer Prediction Using Integration of Harris Hawks Varients & VGG16: A Deep Learning Approach " Journal of Informatica, Volume47, issue 1, October 2022, https://doi.org/10.31449/inf.v47i1.4433	SCI
10.	Reddy, C. R. P. ., &Srinagesh, A. . (2023). Deep Learning Algorithms to Detect Human Pancreatic Cancer from MRI Scan Images. *International Journal of Intelligent Systems and Applications in Engineering*, *11*(6s), 584–591. Retrieved from https://ijisae.org/index.php/IJISAE/article/view/2890	Scopus
11.	RohiniKancharapu, Sri Nagesh A Ayyagari " A comparative study on word embedding techniques for suicide prediction on COVID-19 tweets using deep learning models" International Journal of Information Technology, Pages 1-14, Springer Nature Singapore, June 2023 https://doi.org/ 10.22059/jitm.2023.91573.	SCI
12.	Ch R Prakasha Reddy, A Srinagesh" A Novel Method for Human MRI Based Pancreatic Cancer Prediction Using Integration of Harris Hawks Varients& VGG16: A Deep Learning Approach", Informatica 47 (2023) 115–130 115. https://doi.org/10.31449/inf.v47i1.4433	Scopus
13.	A.Srinagesh et. al. "UNDERGROUND WATER PIPELINE LEAKAGE MONITORING SYSTEM USING IOT" International Journal of Management, Technology and Engineering Volume 9, Issue 6, Link: https://www.ijamtes.org/VOL-9-ISSUE-06-2019-2/ https://app.box.com/s/tnzvy5jz97buy9ixuwlgh9ic9lam55nq	UGC
14.	Ganji, VenkataRatnam, AparnaChaparala, and RadhikaSajja.	SCI

	"Shuffled shepherd political optimization-based deep learning method for credit card fraud detection." Concurrency and Computation: Practice and Experience 35.10 (2023): e7666.	
15.	Chaparala, A., Jain, P. K., Karamti, H., &Karamti, W. (2023). Monitor the Strength Status of Buildings Using Hybrid Machine Learning Technique. IEEE Access, 11, 26441-26458.	SCI
16.	Rao, M. V. V., &Chaparala, A. (2022). A novel feature-based SHM assessment and predication approach for robust evaluation of damage data diagnosis systems. Wireless Personal Communications, 124(4), 3387-3411.	SCI
17.	Yanamadni, V. R. ., Seetha, J. ., Kumar, T. S. ., Kannaiah, S. K. ., J, B. ., &Brahmaiah, M. . (2023). Computer-Aided Detection of Skin Cancer Detection from Lesion Images via Deep-Learning Techniques. International Journal on Recent and Innovation Trends in Computing and Communication, 11(2s),293–302. https://doi.org/10.17762/ijritcc.v11i2s.6158.	Scopus
18.	Dr.R.Josphineleela, S.Preethi, Ashwin.M, Dr. MedaSrikanth, EluriRamesh,VenkataAnushaKolluru ," Feature Extraction Techniques in Medical Imaging: A Systematic Review", International Journal on Recent and Innovation Trends in Computing and CommunicationISSN: 2321-8169 Volume: 11 Issue: 5DOI: https://doi.org/10.17762/ijritcc.v11i5.6521.	Scopus
19.	Dr.C.P.Indumathi, Dr. Srinivas D B, Dr. A. Aleeswari, Dr. K. Yasmin, N.Zareena, MohitTiwari," IOT BASED HEALTHCARE MONITORING SYSTEMS IN ELECTRONIC HEALTH RECORD (EHR)" Journal of Clinical Otorhinolaryngology, Head, and Neck Surgery,	Scopus
20.	Ravulapalli, L.T., Paladugu, R.K., Likki, V.K.R., Mothukuri, R., Mukkapati, N., Kilaru, S. (2023). Evaluative study of machine learning classifiers in predicting heart failure: A focus on imbalanced datasets. Ingénierie des Systèmesd'Information, Vol. 28, No. 3, pp. 717-724. https://doi.org/10.18280/isi.280322	SCOPUS
21.	Lakshmi Tulasi .R A Novel Bi-LSTM Based Automatic Image Description Generation,,Ingenierie des Systemesd'Informationthis link is disabled, 2023, 28(2), pp. 527–534	SCOPUS
22.	Kumar, K. S., Madhavi, P. B. & Janaki, K. (2022). An Efficient Video Compression Framework using Deep Convolutional Neural Networks (DCNN). Journal of Computer Science, 18(7), 589-598. https://doi.org/10.3844/jcssp.2022.589.598	SCOPUS

23.	KOMMERLA SIVA KUMAR 1 , Dr. P. BINDHU MADHAVI 2, Dr.K. JANAKI," A HYBRID APPROACH FOR OPTIMIZED VIDEO COMPRESSION USING DEEP RECURRENT AUTO ENCODERS (DRAE) TECHNIQUE", Journal of Theoretical and Applied Information Technology 31st October 2022. Vol.100. No 20	Scopus
24.	Dr. N. VenkateswaraRao," Comparison of Neural Network classifiers for handwritten digit recognition with multiple feature extraction methods", GRADIVA REVIEW JOURNAL, ISSN NO : 0363-8057, PAGE NO: 444-450 DOI:10.37897.GRJ.2022.V8I8.22.50361	Scopus
25.	Gunturi S. Raghavendra, Shanthi Mahesh , ManukondaVenkataPoornaChandrasekharaRao,"A Framework for Blended Sub Feature Engineering for Chronic Disease Prediction Using in-Memory Computing", Revue d'IntelligenceArtificielle Vol. 36, No. 6, December, 2022, pp. 953-957	Scopus
26.	SHAIK IRFAN BABU1 , DR.M.V.P. CHANDRA SEKHARA RAO2," PERFORMANCE EVALUATION BY FEATURE REDUCTION USING DEEP LEARNING FOR IDENTIFYING MALICIOUS WEBSITES", Journal of Theoretical and Applied Information Technology 30th June 2022. Vol.100. No 12, ISSN: 1992-8645.	Scopus
27.	SaradaNakka, ThirupathiRao Komati ,SudhaSreeChekuri," A Novel Architecture for Feature Extraction and Convolution for Image Segmentation of Pathology Detection from Chest X-Ray Images", Traitement du Signal Vol. 39, No. 6, December, 2022, pp. 2217-2222, **DOI:** https://doi.org/10.18280/ts.390637	Scopus
28.	G. Mahesh Reddy,P. HemaVenkataRamana, PonnuruAnusha, BattulaKalyanChakravarthy, AravindaKasukurthi, VaddempudiSujatha Lakshmi," A Survey on Sugarcane Leaf Disease Identification Using Deep Learning Technique(CNN)", International Journal on Recent and Innovation Trends in Computing and CommunicationISSN: 2321-8169 Volume: 11 Issue: 5DOI: https://doi.org/10.17762/ijritcc.v11i5.6611	Scopus

R.V.R.& J.C COLLEGE OF ENGINEERING(AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

2022-2023

RESEARCHPAPERSPUBLISHEDBY FACULTYMEMBERSINCONFERENCE/BOOKCHAPTERS:7

Sno	Conference paper
1	BezawadaManasa, P Venkata Krishna (2023). “Comparative Study on Techniques Used for Anomaly Detection in IoT Data”,4th computing ,communicationa and data engineering-sripadmavathimahilavisvavidyalayam,Tirupathi,India.
2	Rohini Kancharapu, A SriNagesh, M BhanuSridhar," Prediction of Human Suicidal Tendency based on Social Media using Recurrent Neural Networks through LSTM" International Conference on Computing, Communication and Power Technology, (IC3P),2022 doi: https://ieeexplore.ieee.org/document/9793461
3	RohiniKancharapu, A SriNagesh, "Textual Dissection of Live Twitter Reviews on Corona Vaccines Using Various Machine Learning Algorithms" International Conference on Breakthrough in Heuristics And Reciprocation of Advanced Technologies (BHARAT), Pages " 59-64" April 2022.
4	K.Arun, Dr.A. Srinagesh "Sentiment extraction from English-Telugu code mixed tweets using lexicon-based and machine learning approaches" Machine Learning and Internet of Things for Societal Issues by Springer Nature Singapore, pp:97-107, February 2022.
5	M. Jhansi, K. D. Sri, K. H. Chowdary, M. A. Kumar and C. Aparna, "Age and Gender Prediction using Gated Residual Attention Network," *2023 International Conference on Sustainable Computing and Smart Systems (ICSCSS)*, Coimbatore, India, 2023, pp. 622-627, doi: 10.1109/ICSCSS57650.2023.10169205.
6	S J R K PadminivalliV,ValluruKomali,Nelluri Naga SaiKrishna,KunchalaSumanth, presented a paper on "Breast Cancer Detection Using Pre-Processed Images",National Conference on Application of Artificial Intelligence and Internet of Thingson Management, Science and technology(AAIOT 2023),Mahendra College of Engineering, Chennai on April 19,2023.
7	Naramala, V.R. (2023). A Convolution Neural Network Model to Classify Handwritten Digits from Skeletons. In: Bansal, J.C., Sharma, H., Chakravorty, A. (eds) Congress on Smart Computing Technologies. CSCT 2022. Smart Innovation, Systems and Technologies, vol 351. Springer, Singapore. https://doi.org/10.1007/978-981-99-2468-4_2

SCI

(2022-2023)

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RESEARCH ARTICLE

Monitor the Strength Status of Buildings Using Hybrid Machine Learning Technique

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ABSTRACT Standard inspections of buildings are not always possible because of human flaws in prediction. Hence, we need more stable, scalable, and efficient automated processes. Structure Health Monitoring (SHM) is one of the automation systems for forecasting potential losses in building structures. This article suggested how to monitor the strength status of buildings by using Hybrid Machine Learning Technique (HMLT). HMLT contains two-hybrid procedures. One for identifying the most significant features in Dataset using Hybrid Feature Selection Method (HFSM). HFSM uses the combined features of Mutual information (MI) and Rough Set Theory (RST) for feature selection. Another method is optimized classifiers such as Support Vector Machine (SVM) and Artificial Neural Networks (ANN) are used for the classification and predicting the accuracy i.e. predicting the strength status of buildings. Now the proposed method is applied on Earthquake Damage Dataset (Gorkha Earthquake in April 2015). Training and 10- fold cross-validation procedure pragmatic to features. Then the performance of proposed method has been evaluated using the F1-score and accuracy metrics and get 91% and 92% respectively. Finally, the result analysis demonstrates the importance of the proposed approach in predicting the status of the building strength.

INDEX TERMS KNN: K-nearest neighbors, RF: random forest, GBM: gradient boosted machines, SVM: support vector machine, ANN: artificial neural networks, HMLT: hybrid machine learning technique, SHM: structure health monitoring system, HFSM: hybrid future selection methodology.

I. INTRODUCTION

The definition of an Earthquake is the vibration of the earth or the pulsating of the ground. Natural, human-made, and artificial/induced seismicity are some types of earthquakes. Natural Disasters generates the damages in civil-infra-structures. Rathnaweera et al. [1] and Cremen et al. [2] presented the percentage of earthquakes that occurred in natural is 0-89%, and the remaining 0-9% belongs to human-made hazards/other issues. In recent years, the damage rate in the buildings and their structures are increased rapidly because of environmental changes and human errors. Early detection of disasters mitigates the damage rate as well as death rate.

The abnormal changes in Animal Behavior [3], Temperature [4], [5], Lunglin-1976 and Przhevalsk -Russia 1970, Water Levels [6], [7], Earthquake in 2016 at Kumamoto), Velocity of P-wave (V_P) and Velocity of S-wave (V_S), use as instances for early detection of disasters. ''Damage'' can be defined as the changes in the properties of the building structures, boundary environments and system connectivity such as geo-metric and/or material. It shows the unsympathetically impact on the performance of the model. In the opinion

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Concurrency and Computation
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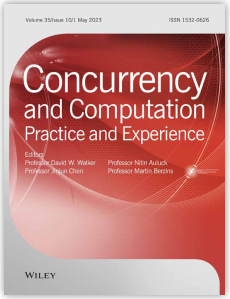

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RESEARCH ARTICLE

Shuffled shepherd political optimization-based deep learning method for credit card fraud detection

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Summary

Digital transactions based on credit cards are gradually increasing concept due to expediency. The amount of fraudulent transactions has intensely enlarged in modern days, because of the fast development of e-services, namely e-finance, mobile payments, and e-commerce as well as the promotion of credit cards. Criminal fraud behaviors and user's payment behaviors are frequently varying, thus performance improvement of the fraud identification method and its stability are more challenging processes. The Shuffled Shepherd Political Optimization-based Deep Residual network (SSPO-based DRN) scheme is established for credit card fraud identification in this research. The SSPO is developed by merging the Political Optimization (PO) and

References Related Information

Recommended

Credit Card ABS
John N. McElravey CFA

Structured Products and Related Credit Derivatives: A Comprehensive Guide for Investors, [1]

Determinants of credit card debt: Differentiating between revolving credit debt and petty installment loan in China

A Novel Method for Human MRI Based Pancreatic Cancer Prediction Using Integration of Harris Hawks Varients & VGG16: A Deep Learning Approach

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Keywords: BADF, classification, CLAHE, deep learning, pancreatic cancer, segmentation, UNET, medical image processing, image segmentation

Among all cancers, pancreatic cancer has a very poor prognosis. Early diagnosis, as well as successful treatment, are difficult to achieve. As the death rate is increasing at a rapid rate (47,050 out of 57650 cases), it is of utmost importance for medical experts to diagnose PC at earlier stages. The application of Deep Learning (DL) techniques in the medical field has revolutionized so much in this era of technological advancement. An analysis of clinical proteomic tumor data provided by the Clinical Proteome Tumor Analysis Consortium Pancreatic Ductal Adenocarcinoma (CPTAC-PDA) at the National Cancer Institute was used to demonstrate an innovative deep learning approach in this study. This includes a) collection of data b) preprocessed using CLAHE and BADF techniques for noise removal and image enhancement, c) segmentation using UNet++ for segmenting regions of interest of cancer. Followed by, d) feature extraction using HHO based on CNN and e) feature selection using HHO based on BOVW for extracting and selecting features from the images. Finally, these are subject to the f) classification stage for better analysis using the VGG16 network. Experimental results are carried out using various state-of-art models over various measures in which the proposed model outperforms with better accuracy:0.96, sensitivity:0.97, specificity:0.98, and detection rate:0.95.

Povzetek: Opisana je metoda globokega učenja za napovedovanje raka na ledvicah.

1 Introduction

The death rate from pancreatic cancer (PC) in the United States is among the highest of all cancers. Despite aggressive treatment approaches and combination modalities, the 5-year survival rate remains 5%. According to 2017's SEER data [1], Pancreatic ductal adenocarcinoma accounted for 47,050 deaths and new cases of 57,600 were reported. In 2030, PDAC is expected to overtake cancer as the 2nd largest cause of mortality [2]. Only 15 to 20% of sufferers are qualified for a potentially curative surgery because of non-specific indications and late discovery [3]. Whipple surgery left pancreatectomy and complete pancreatectomy+ are the three surgical options for pancreatic cancer treatment. By analyzing the resection tissues, it will be possible to determine whether or not lymph nodes are metastasizing from the tumor, as well as whether there is pre-invasive pancreatic intraepithelial neoplasia. Further therapeutic management will be based on pathological results [4]. It is important to identify neoplastic cells from benign or inflammatory cells to have a clear picture of the tumor. Because of the tremendous heterogeneity between and within tumors in growth pattern, cytology, and stroma (figure 1), this can be a daunting task. A fibrotic and inflammatory microenvironment contributes to the heterogeneity and complex growth pattern of tumors, with the latter constituting most of the tumor mass [5]. On microscopic examination, PDAC is primarily glandular, with extensive desmoplastic stroma formation. However, other structures can also be observed, including (micro-)papillae, solid nests, cribriform, or small, single-cell tumors [6]. There are several molecular factors associated with the development of non-glandular, histologically poorly differentiated tumor growth patterns, such as mesenchymal phenotypes, proteases, and neutrophil infiltrates [7,8]. PDAC grows in a dispersed pattern. It is in these cases that the tumor cells are not usually grouped, but are instead found in cellular clusters which encroach on the surrounding tissues, nerve

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Preprocessing of Aspect-based English Telugu Code Mixed Sentiment Analysis

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Abstract

Extracting sentiments from the English-Telugu code-mixed data can be challenging and is still a relatively new research area. Data obtained from the Twitter API has to be in English-Telugu code-mixed language. That data is free-form text, noisy, lexicon borrowings, code-mixed, phonetic typing and misspelling data. The initial step is language identification and sentiment class labels assigned to each tweet in the dataset. The second step is the data normalization task, and the final step is classification, which can be achieved using three different methods: lexicon, machine learning, and deep learning. In the lexicon-based approach, tokenize each tweet with its language tag. If the language tag is in Telugu, transliterate the roman script into native Telugu words. Words are verified with TeluguSentiWordNet, and the Telugu sentiments are extracted, and English SentiWordNets are used to extract sentiments from the English tokens. In this paper, the aspect-based sentiment analysis approach is suggested and used with normalized data. In addition, deep learning and machine learning techniques are applied to extract sentiment ratings, and the results are compared to prior work.

Keywords: English-Telugu code-mixed data; Natural language processing; Telugu Senti Wordnet; Machine learning; Deep learning.

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ORIGINAL RESEARCH

A comparative study on word embedding techniques for suicide prediction on COVID-19 tweets using deep learning models

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Abstract COVID-19 caused a pathetic situation worldwide which led to public health crises, economic crises, employment losses, and mental anxiety. Social media websites are being inundated with reports on the virus, which has led to a variety of perspectives, thoughts, and emotions being expressed and experienced by social media sources. Taking advantage of the amount of information available, an analysis of sentiments user opinions expressed can be done on social networks. Sentiment Analysis is widely used in social media platforms for understanding the user's expressions and sentiments. In this work, we extricate the information from Twitter utilizing search words, a python API called tweepy, pre-process it, and perform the word embedding process. The Word Embedding process is the replacement for the one-hot encoding technique, which converts the given into the form of vectors by tokenizing them as words and also spotting the relation among the words. Word Embedding Techniques such as Word2Vec, Glove, and FastText are used to convert the text into vectors which are then fed to the Artificial Neural Network (ANN) Models for training. Valance Aware Dictionary and sentiment Reasoner (VADER) are used to detecting suicide propensity in tweets as positive, negative, and neutral after which the user can be notified and solutions are provided. As a result, we will be able to figure out the user's suicidal feelings and emotions during the pandemic situation. This research is used for comparing different word embedding techniques and predicting the suicide inclination of the tweets using the word embedding vectors and the neural network models.

Keywords COVID-19 · Suicide prediction · Word embedding techniques · Twitter · Tweepy · Artificial neural networks · COVID-19 search words · VADER

1 Introduction

Suicide is a tragedy that profoundly affects many people, their families, communities, and countries, and has a long-term impact on individuals. It has been recognized as the United States' tenth most common cause of death, with around thirty thousand deaths annually, and approximately 1 million suicide deaths worldwide. Health experts have warned the world throughout the pandemic about the rise in suicides, and terms like "suicide tsunami" and "COVID-19 related suicide rates" have become popular. The pandemic has significantly impacted people due to various factors such as economic stress, healthcare access barriers, COVID-19 risk factors, social distancing, isolation, and more.

Sentiment analysis predicts emotion in social media posts using natural language processing. Various types of sentiment analysis exist, including graded sentiment analysis and emotion analysis. When applied to posts related to COVID-19, sentiment analysis can help anticipate the effects of the virus and pandemic on individuals worldwide [31].

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Deep Learning Algorithms to Detect Human Pancreatic Cancer from MRI Scan Images

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Submitted: 12/02/2023 **Revised:** 13/04/2023 **Accepted:** 10/05/2023

Abstract: The idea of this project is to implement a Computer-Aided Detection system (CAD) for the early detection of pancreatic tumors based on the UNet++ architecture. Contrast Limited Adaptive Histogram Equalization (CLAHE) and Boosted Anisotropic Diffusion Filter (BADF) methods are used to enhance the MRI image. The pancreatic region associated with a lesion is precisely separated from the MRI image by segmentation. The best subset of texture characteristics is assessed by creating a classification system based on texture features that integrate HHO-based CNN and HHO-based Bag of visual terms. This will enhance classification accuracy. Transfer learning and Fine-tuning model using VGG 16 classifiers are utilised to create an automated system for classifying different grades of tumors in MRI Images. For various tumor classes, quantitative analysis is performed. The accuracy of the classification of the proposed classifier is validated and it is compared with the state-of-the-art approach.

Index Terms— *Detection, Classification, Pancreatic Cancer, Magnetic resonance imaging, Computer Aided Detection, Deep learning.*

1. Introduction

The primary goal of this Research Is To Use A Computer-Aided Detection (CAD) Model To identify And classify Pancreatic Cancer (PC) In Magnetic resonance images (MRI). The early detection and treatment of PC are extremely difficult. An organ called the pancreas is located behind the lower portion of the stomach. The American Cancer Society reports that the death rate for PC patients is increasing and currently stands at the fourth highest level in the country. The distribution of PCs is still widespread in undeveloped nations. To help doctors give the best treatment plan for each stage of pancreatic cancer and enable patients to obtain early medical interventions before advanced degrees of pancreatic cancer form, comprehensive preoperative PC prognosis and staging are very crucial, especially in the identification of pancreatic cancer staging. Using MRI scans, Computer Aided Diagnosis (CAD) methods were created to identify PC in their early stages. To collect the quantitative data needed to diagnose pancreatic nodules, the CAD system was created.

2. Literature Survey

The proposed UNet++[1], an encoder-decoder architecture based on the UNet, has produced good results on several medical image segmentation tasks. So this model is used to shorten our training time and produce better results. It also has a side-by-side scientific comparison between Unet and Unet++ architectures, which brought us to the conclusion of adopting Unet++ for our implementation. The use of AI in medicine is on the rise, particularly in the discipline of gastroenterology. In imaging-based testing and clinical diagnostic prediction, AI can help gastroenterologists. A branch of artificial intelligence called machine learning uses mathematical methods to build prediction models by identifying patterns in datasets without explicit programming [2]. In order to detect pancreatic cancer early, screening is frequently used in high-risk individuals nowadays. To find the high-risk group & accomplish early detection and prompt treatment of PC, we may need to fully comprehend the risk factors and pathophysiology of the disease. This paper gave us an insight into the different aspects of pancreatic cancer and how important the work that we are doing for the medical community is [3]. Researchers have focused a lot of attention on the Harris Hawks Optimization (HHO) method because of its performance, the calibre of the findings, and its tolerable convergence when handling various applications in real-world problems.

> Due to the rising attention, there have been several applications of HHO to diverse optimization issues in various fields.

The review's findings showed that even though the HHO algorithm is still in its infancy, its advantages over other well-known metaheuristic algorithms in terms of speed and accuracy for solving a variety of benchmark problems and solving many real-world optimization problems have been

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Web of Science

(2022-2023)

Content-Based Image Retrieval Using Hybrid Densenet121-Bilstm and Harris Hawks Optimization Algorithm

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ABSTRACT

In the field of digital data management, content-based image retrieval (CBIR) has become one of the most important research areas, and it is used in many fields. This system searches a database of images to retrieve most visually comparable photos to a query image. It is based on features derived directly from the image data, rather than on keywords or annotations. Currently, deep learning approaches have demonstrated a strong interest in picture recognition, particularly in extracting information about the features of the image. Therefore, a Densenet-121 is employed in this work to extract high-level and deep characteristics from the images. Afterwards, the training images are retrieved from the dataset and compared to the query image using a Bidirectional LSTM (BiLSTM) classifier to obtain the relevant images. The investigations are conducted using a publicly available dataset named Corel, and the f-measure, recall, and precision metrics are used for performance assessment. Investigation outcomes show that the proposed technique outperforms the existing image retrieval techniques.

KEYWORDS

BiLSTM, CBIR, Deep Learning, Densenet-121, Feature Extraction

Introduction

The rapid proliferation of digital images in cyberspace has inspired research into developing efficient image content management system. In the recent decade, the rapid advancement of digital capturing devices and social media has led to a huge development of image database systems (Desai et al., 2021; Zhong et al., 2021; Desai et al., 2021). Acquiring important data from these enormous databases has stimulated the research community's desire to find effective alternatives that do not rely on textual descriptions for each image. This investigation led to the discovery of a technique for content-based picture retrieval (CBIR).

In many areas, the CBIR is utilized like crime preventing, video processing, digital albums, biodiversity, medical imaging, and other areas which need image recognition. In CBIR, the images are automatically indexed based on its low level features extracted from the image like shape and color which are only used for image retrieval (Keisham et al., 2022; Kumar et al., 2022; Chen et al., 2021). The two most critical aspects of the CBIR program's implementation are feature representation and similarity measurement.

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SCOPUS

(2022-2023)

Effective Groundwater Quality Classification Using Enhanced Whale Optimization Algorithm with Ensemble Classifier.

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- **Author(s):** Relangi, N. D. S. S. Kiran; Chaparala, Aparna; Sajja, Radhika

- **Abstract:** In recent decades, the groundwater quality monitoring application gained more attention among the researcher community to assess the groundwater quality. The water quality index (WQI) is one of the effective models used for assessing the groundwater quality, which is not always superior in classifying the groundwater quality, especially in the large scale databases. Therefore, a new ensemble model is developed in this manuscript for classifying the ground-water quality. After collecting the data from the real-time and Indian water quality databases, the WQI calculation and the data denoising (Z-score and Min-Max normalization techniques) are accomplished. From the denoised data samples, the optimal features/attributes are chosen by implementing enhanced whale optimization algorithm (EWOA). Usually, the traditional WOA is computationally complex to explore the global solutions, therefore, a fitness function probability pro is included with the WOA for enhancing convergence speed and classification accuracy. The chosen optimal features/attributes are fed to the ensemble model: AlexNet and K-nearest neighbor (KNN) for classifying the types of groundwater quality. The introduced ensemble based EWOA model has achieved 99.88% and 99.98 (very near to 100%) of classification accuracy on the real time database and Indian water quality database.

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Identification of Potential Quality of Groundwater Using Improved Fuzzy C Means Clustering Method

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Keywords:
artificial neural networks clustering analysis, Davies Bouldin index, silhouette score, weighted arithmetic water quality index

ABSTRACT

The groundwater quality assessment gained more attention among the water quality management stations and researchers. The conventional water quality index method and artificial neural network models are used to assess groundwater. But these models are inadequate to handle data with uncertainty. In this work, we propose an improved Fuzzy C Means clustering method to identify the homogeneous clusters with respect to groundwater quality. For this purpose 1020 groundwater samples data with 7 physiochemical parameters of the year 2019 are collected from West Godavari, Andhra Pradesh, India. The effectiveness of the proposed clustering method is evaluated with two standard clustering methods namely K-means and Fuzzy C Means. The initial selection of the number of clusters and cluster centers determines the success of both the conventional K Means and Fuzzy C Means clustering methods. The proposed improved Fuzzy C Means method identifies the optimal number of clusters based on the water index value. The proposed improved Fuzzy C Means clustering method is implemented on the groundwater data set. The performance is computed with the help of the silhouette score and Davies Bouldin Index. The proposed clustering method outperforms with the existing K Means and Fuzzy C Means with silhouette score of 0.857 and Davies Bouldin Index value of 0.502 when the number of clusters are 4.

1. INTRODUCTION

Groundwater is one among the natural resource and is generally used by many people for drinking purpose. Apart from the drinking it can be used in manufacturing industries, irrigation. Across the globe majority of the people depends on the groundwater for drinking, agricultural and domestic purposes. If the groundwater is primarily used for drinking purpose then quality needs to be given a high priority due to contamination by various factors. In many sampling locations the groundwater is polluted by anthropogenic activities [1-3]. Groundwater quality assessment, clustering and predicting the quality of the groundwater is required to effectively deal with groundwater pollution. Therefore this study is aimed to identify the homogeneous clusters for potable purpose.

The evaluation of groundwater quality is basically viewed as a clustering and classification problem also. Because present water quality assessment criteria aren't standardized, there's a lot of interest in unsupervised approaches. Clustering of groundwater is the process of identifying the homogeneous clusters with respect to groundwater quality. Identifying the homogeneous clusters is based on the closeness of groundwater data. There are various types of clustering methods that can be grouped by partition, hierarchical and clustering of large data sets. The K Means, hierarchical and Fuzzy C Means method are the very popular methods to identify homogeneous clusters in the data set. The water quality management stations employ these clustering models frequently to identify the homogeneous clusters. The K Means clustering method is also known as hard clustering and FCM is called as soft clustering technique. The hard clustering model assign each data sample to only one cluster but by soft clustering method each data sample is belongs to multiple clusters basing on the membership values between the data sample and cluster centroid.

Till date, many methods have been used to the assess groundwater quality, including conventional water quality assessment methods, Artificial Neural Networks (ANN) and Fuzzy logic. ANN are self-organizing, self-learning, non-linear processes that can handle the system which is difficult to be handled by the conventional water quality assessment methods. ANN is well suited for classifying and predicting groundwater quality due to its beneficial treatment properties such as non-linearity, parallelism, addiction tolerance, learning and generalization capabilities, distributed associations, fault tolerance capabilities, and applicability to complex problems. In the past, researchers applied ANN and also performed comparative study of ANN models in groundwater quality assessment [4-6]. The problem with the ANN is that it can handle the crisp data but groundwater data is associated with uncertainty and the fuzzy logic theory is the best way to present the groundwater data. The models built on top of the fuzzy theory explores the fuzzy nature exist in the data Hosseini-Moghari et al. [7]. Therefore in this research work we used soft clustering method to identity the homogenous regions from the groundwater data. Further, we

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ORIGINAL PAPER

Zero shot image classification system using an optimized generalized adversarial network

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Abstract
Image attribute classification is the hottest topic in the digital visualization industry. But, predicting the unseen class attributes using neural approaches is very complicated. Hence, zero-shot learning has been introduced along with the neural models. Still, there are issues with classifying the unseen class features because of poor prediction and noisy data. So, the present research article has aimed to design a novel Ant Lion-based Generalized Adversarial Intelligent Network (AL-GAIN) for attributes forecasting from unseen data. Primarily, the database has been filtered in the pre-processing phase. The error-free data is entered into the classification phase to identify and store the present attributes in the trained data. Moreover, the test data was imported, and features were extracted by the novel AL-GAIN. The similarity matching process was performed to find the unseen class attributes. The planned model has been executed in the python environment. Finally, the prediction accuracy has been measured for both seen and unseen data compared with other models and has gained better attributes in forecasting outcomes.

Keywords Zero-shot learning · Attributes prediction · Seen and unseen class accuracy · Similarity matching

1 Introduction

Nowadays, the usage of digital applications has been enriched worldwide; it has maximized storage capacity [1]. Hence, the cloud contains many data stored for different purposes and by diverse users [2]. In addition, to recollect the data from the storage, an efficient retrieval strategy with less complexity and cost is crucial [3]. Different information and image retrieval models were implemented to collect the required data [4]. But, those models have needed more resources to execute the process [5]. Also, processing the image data requires a maximum time duration for image retrieval [6]. Hence, the zero-shot (ZS) image processing model has been introduced [7]. This ZS image categorization functions in dual ways: retrieving the

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Original Article

An Enhanced Text Mining Approach using Ensemble Algorithm for Detecting Cyber Bullying

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Abstract *- Text mining (TM) is most widely used to process the various unstructured text documents and process the data present in the various domains. The other name for text mining is text classification. This domain is most popular in many domains, such as movie reviews, product reviews on various E-commerce websites, sentiment analysis, topic modeling, and cyberbullying on social media messages. Cyberbullying is the type of abusing someone with insulting language. Personal abuse, sexual harassment, and other abuse come under cyberbullying. Several existing systems are developed to detect bullying words based on their situation on social networking sites (SNS). SNS becomes a platform for bullying someone. In this paper, An Enhanced text mining approach is developed by using Ensemble Algorithm (ETMA) to solve several problems in traditional algorithms and improve the accuracy, processing time, and quality of the result. ETMA is the algorithm used to analyze the bullying text within the social networking sites (SNS) such as Facebook, Twitter, etc. The ETMA is applied to a synthetic dataset collected from various data sources consisting of 5k messages belonging to bullying and non-bullying. The performance is analyzed by showing Precision, Recall, F1-Score, and Accuracy.*

Keywords *- Deep Learning, Cyber Bullying, Text Mining, Ensemble Algorithm.*

1. Introduction

Web 2.0 is most widely used to improve user-created platforms for social networking sites (SNS) users [1]. TM is a data mining (DM) sub-domain to mine accurate patterns. TM is most widely used to extract patterns from various text documents or text data. In TM, many types of structured and unstructured are present for analysis. TM is also used to process large datasets by extracting interesting and required information that is useful in various applications. Every day huge amounts of data are generated on social media. Social networking sites (SNS) are most widely used to communicate with various users. In [2], various ML algorithms discuss the challenges faced in detecting cyberbullying. ML algorithms make the prediction more accurate than the behavior of humans [3].

Nowadays, social media messages are generating more and more day by day. Huge messages are generated by the various types of users in SNS. Cyberbullying becomes more complicated on SNS because personal abuse becomes more complicated on social media platforms. Detecting the bullying messages and preventing this message is more complex for the SNS developers. Cyberbullying is a challenging task that can be done in different ways, such as morphing photos, using tough language, uploading personal videos, etc. This research is mainly focused on text bullying. This text bullying can be stopped with the automated technology built-in to find the cyberbullying activities and remove them from the SNS platform. Finding these bullying comments is a very tough task because classifying these bully words or comments is unique. It is very important to know the exact bullying comments. In cyberbullying, there are three types of users: sufferer, forecaster, and analyzer.

In this paper, An Enhanced text mining approach is developed by using Ensemble Algorithm (ETMA) to analyze the messages collected from Twitter data. This dataset contains two folders, a training set, and a testing set. Training contains 10k comments, and the testing set contains 7k Twitter messages with 7 attributes. The ETMA follows the powerful pre-processing after initializing the dataset. The training removes the noise text from the dataset and gives better text based on the bully score. The performance is analyzed by showing the parameters such as precision, recall, accuracy, F1-measure, and duration.

Content-Based Image Retrieval Using Hybrid Densenet121-Bilstm and Harris Hawks Optimization Algorithm

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ABSTRACT

In the field of digital data management, content-based image retrieval (CBIR) has become one of the most important research areas, and it is used in many fields. This system searches a database of images to retrieve most visually comparable photos to a query image. It is based on features derived directly from the image data, rather than on keywords or annotations. Currently, deep learning approaches have demonstrated a strong interest in picture recognition, particularly in extracting information about the features of the image. Therefore, a Densenet-121 is employed in this work to extract high-level and deep characteristics from the images. Afterwards, the training images are retrieved from the dataset and compared to the query image using a Bidirectional LSTM (BiLSTM) classifier to obtain the relevant images. The investigations are conducted using a publicly available dataset named Corel, and the f-measure, recall, and precision metrics are used for performance assessment. Investigation outcomes show that the proposed technique outperforms the existing image retrieval techniques.

KEYWORDS

BiLSTM, CBIR, Deep Learning, Densenet-121, Feature Extraction

Introduction

The rapid proliferation of digital images in cyberspace has inspired research into developing efficient image content management system. In the recent decade, the rapid advancement of digital capturing devices and social media has led to a huge development of image database systems (Desai et al., 2021; Zhong et al., 2021; Desai et al., 2021). Acquiring important data from these enormous databases has stimulated the research community's desire to find effective alternatives that do not rely on textual descriptions for each image. This investigation led to the discovery of a technique for content-based picture retrieval (CBIR).

In many areas, the CBIR is utilized like crime preventing, video processing, digital albums, biodiversity, medical imaging, and other areas which need image recognition. In CBIR, the images are automatically indexed based on its low level features extracted from the image like shape and color which are only used for image retrieval (Keisham et al., 2022; Kumar et al., 2022; Chen et al., 2021). The two most critical aspects of the CBIR program's implementation are feature representation and similarity measurement.

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An Ensemble Approach for Cyber Bullying: Text Messages and Images

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Keywords:
convolutional neural networks (CNN), text mining (TM), Term Frequency (TF)-Inverse document frequency (IDF), Deep Neural Network (DNN)

ABSTRACT

Text mining (TM) is a domain used to find valuable patterns from various text documents. Cyberbullying is the term used to abuse a person online or offline platform. Nowadays, cyberbullying has become more dangerous to people who are using social networking sites (SNS). Cyberbullying is of many types, such as text messaging, morphed images, videos, Etc. It is a challenging task to prevent this type of abuse of the person in online SNS. Finding accurate text mining patterns gives better results in detecting cyberbullying on any platform. Cyberbullying is developed with the online SNS to send defamatory statements or orally bully other persons, or by using the online forum to abuse in front of SNS users. Deep Learning (DL) is one of the significant domains used to extract and learn the quality features dynamically from the low-level text inclusions. In this scenario, Convolution neural network (CNN) are DL models used to train text data, images, and videos. CNN is a compelling approach to preparing these data types and achieving better text classification. This paper describes the Ensemble model with the integration of Term Frequency (TF)-Inverse document frequency (IDF) and Deep Neural Network (DNN) with advanced feature-extracting techniques to classify the bullying text, images, and videos. Feature extraction technique extracts the features of cyber-bullying patterns from the text and images. A limited number of datasets are used to classify the data. The proposed approach also focused on reducing the training time and memory usage, which helps the classification improvement.

1. INTRODUCTION

The usage of social networking sites (SNS) is increasing rapidly every day. SNS is a platform that gives enormous opportunities and communication to people in several fields. People may discuss various issues that are more popular using this platform. In the SNS platform, cyber-bullying is one of the significant issues in the present situation. Cyber-bullying is increasing daily through several types of messages and images. In 2021, 77.96% of SNS users felt wrong about cyber-bullying [1]. 95% of people accepted that they witnessed some cyberbullying occurring online. So, this is the time to stop cyber-bullying [2]. Cyber-bullying is of many types, such as abusing the person using an SNS platform with comments, personal messages, morphed images, Etc. Cyber-bullying has become a more complicated issue and creates many problems in my personal life. Many SNS providers try to solve this issue by blocking users based on their behavior. Still, this is an unsolved issue in SNS. Text classification is a domain that belongs to various fields used to solve the various misclassification issues present in this domain.

In text classification, the features extracted by removing the noise from the given text inputs are called words, sentences, phrases, etc. [3]. It is essential to find the patterns that belong to a specific language, such as English. Various feature extraction methods are used to classify the different types of text messages.

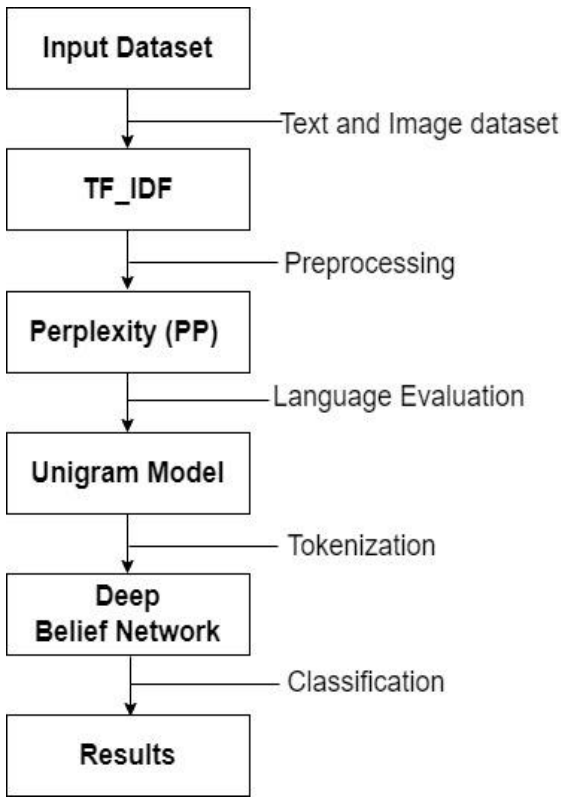

Figure 1. Architecture diagram

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Deep Learning Algorithms to Detect Human Pancreatic Cancer from MRI Scan Images

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Abstract: The idea of this project is to implement a Computer-Aided Detection system (CAD) for the early detection of pancreatic tumors based on the UNet++ architecture. Contrast Limited Adaptive Histogram Equalization (CLAHE) and Boosted Anisotropic Diffusion Filter (BADF) methods are used to enhance the MRI image. The pancreatic region associated with a lesion is precisely separated from the MRI image by segmentation. The best subset of texture characteristics is assessed by creating a classification system based on texture features that integrate HHO-based CNN and HHO-based Bag of visual terms. This will enhance classification accuracy. Transfer learning and Fine-tuning model using VGG 16 classifiers are utilised to create an automated system for classifying different grades of tumors in MRI Images. For various tumor classes, quantitative analysis is performed. The accuracy of the classification of the proposed classifier is validated and it is compared with the state-of-the-art approach.

Index Terms— *Detection, Classification, Pancreatic Cancer, Magnetic resonance imaging, Computer Aided Detection, Deep learning.*

1. Introduction

The primary goal of this Research Is To Use A Computer-Aided Detection (CAD) Model To identify And classify Pancreatic Cancer (PC) In Magnetic resonance images (MRI). The early detection and treatment of PC are extremely difficult. An organ called the pancreas is located behind the lower portion of the stomach. The American Cancer Society reports that the death rate for PC patients is increasing and currently stands at the fourth highest level in the country. The distribution of PCs is still widespread in undeveloped nations. To help doctors give the best treatment plan for each stage of pancreatic cancer and enable patients to obtain early medical interventions before advanced degrees of pancreatic cancer form, comprehensive preoperative PC prognosis and staging are very crucial, especially in the identification of pancreatic cancer staging. Using MRI scans, Computer Aided Diagnosis (CAD) methods were created to identify PC in their early stages. To collect the quantitative data needed to diagnose pancreatic nodules, the CAD system was created.

2. Literature Survey

The proposed UNet++[1], an encoder-decoder architecture based on the UNet, has produced good results on several medical image segmentation tasks. So this model is used to shorten our training time and produce better results. It also has a side-by-side scientific comparison between Unet and Unet++ architectures, which brought us to the conclusion of adopting Unet++ for our implementation. The use of AI in medicine is on the rise, particularly in the discipline of gastroenterology. In imaging-based testing and clinical diagnostic prediction, AI can help gastroenterologists. A branch of artificial intelligence called machine learning uses mathematical methods to build prediction models by identifying patterns in datasets without explicit programming [2]. In order to detect pancreatic cancer early, screening is frequently used in high-risk individuals nowadays. To find the high-risk group & accomplish early detection and prompt treatment of PC, we may need to fully comprehend the risk factors and pathophysiology of the disease. This paper gave us an insight into the different aspects of pancreatic cancer and how important the work that we are doing for the medical community is [3]. Researchers have focused a lot of attention on the Harris Hawks Optimization (HHO) method because of its performance, the calibre of the findings, and its tolerable convergence when handling various applications in real-world problems.

> Due to the rising attention, there have been several applications of HHO to diverse optimization issues in various fields.

The review's findings showed that even though the HHO algorithm is still in its infancy, its advantages over other well-known metaheuristic algorithms in terms of speed and accuracy for solving a variety of benchmark problems and solving many real-world optimization problems have been

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A Novel Method for Human MRI Based Pancreatic Cancer Prediction Using Integration of Harris Hawks Varients & VGG16: A Deep Learning Approach

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Keywords: BADF, classification, CLAHE, deep learning, pancreatic cancer, segmentation, UNET, medical image processing, image segmentation

Among all cancers, pancreatic cancer has a very poor prognosis. Early diagnosis, as well as successful treatment, are difficult to achieve. As the death rate is increasing at a rapid rate (47,050 out of 57650 cases), it is of utmost importance for medical experts to diagnose PC at earlier stages. The application of Deep Learning (DL) techniques in the medical field has revolutionized so much in this era of technological advancement. An analysis of clinical proteomic tumor data provided by the Clinical Proteome Tumor Analysis Consortium Pancreatic Ductal Adenocarcinoma (CPTAC-PDA) at the National Cancer Institute was used to demonstrate an innovative deep learning approach in this study. This includes a) collection of data b) preprocessed using CLAHE and BADF techniques for noise removal and image enhancement, c) segmentation using UNet++ for segmenting regions of interest of cancer. Followed by, d) feature extraction using HHO based on CNN and e) feature selection using HHO based on BOVW for extracting and selecting features from the images. Finally, these are subject to the f) classification stage for better analysis using the VGG16 network. Experimental results are carried out using various state-of-art models over various measures in which the proposed model outperforms with better accuracy:0.96, sensitivity:0.97, specificity:0.98, and detection rate:0.95.

Povzetek: Opisana je metoda globokega učenja za napovedovanje raka na ledvicah.

1 Introduction

The death rate from pancreatic cancer (PC) in the United States is among the highest of all cancers. Despite aggressive treatment approaches and combination modalities, the 5-year survival rate remains 5%. According to 2017's SEER data [1], Pancreatic ductal adenocarcinoma accounted for 47,050 deaths and new cases of 57,600 were reported. In 2030, PDAC is expected to overtake cancer as the 2nd largest cause of mortality [2]. Only 15 to 20% of sufferers are qualified for a potentially curative surgery because of non-specific indications and late discovery [3]. Whipple surgery left pancreatectomy and complete pancreatectomy+ are the three surgical options for pancreatic cancer treatment. By analyzing the resection tissues, it will be possible to determine whether or not lymph nodes are metastasizing from the tumor, as well as whether there is pre-invasive pancreatic intraepithelial neoplasia. Further therapeutic management will be based on pathological results [4]. It is important to identify neoplastic cells from benign or inflammatory cells to have a clear picture of the tumor. Because of the tremendous heterogeneity between and within tumors in growth pattern, cytology, and stroma (figure 1), this can be a daunting task. A fibrotic and inflammatory microenvironment contributes to the heterogeneity and complex growth pattern of tumors, with the latter constituting most of the tumor mass [5]. On microscopic examination, PDAC is primarily glandular, with extensive desmoplastic stroma formation. However, other structures can also be observed, including (micro-)papillae, solid nests, cribriform, or small, single-cell tumors [6]. There are several molecular factors associated with the development of non-glandular, histologically poorly differentiated tumor growth patterns, such as mesenchymal phenotypes, proteases, and neutrophil infiltrates [7,8]. PDAC grows in a dispersed pattern. It is in these cases that the tumor cells are not usually grouped, but are instead found in cellular clusters which encroach on the surrounding tissues, nerve

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Computer-Aided Detection of Skin Cancer Detection from Lesion Images via Deep-Learning Techniques

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Abstract: More and more genetic and metabolic abnormalities are now known to cause cancer, which is typically fatal. Any particular body part may become infected by cancerous cells, which can be fatal. One of the most prevalent types of cancer is skin cancer, which is spreading worldwide.The primary subtypes of skin cancer are squamous and basal cell carcinomas, as well as melanoma, which is clinically aggressive and accounts for the majority of fatalities. Screening for skin cancer is so crucial.Deep Learning is one of the best options to quickly and precisely diagnose skin cancer (DL).This study used the Convolution Neural Network (CNN) deep learning technique to distinguish between the two primary types of cancers, malignant and benign, using the ISIC2018 dataset. The 3533 skin lesions in this dataset range from benign to malignant, and nonmelanocytic to melanocytic malignancies. The images were initially enhanced and edited using ESRGAN. The preprocessing stage involved resizing, normalising, and augmenting the images. By combining the results of numerous repetitions, the CNN approach might be used to categorise images of skin lesions. Several transfer learning models, such as Resnet50, InceptionV3, and Inception Resnet, were then used for fine-tuning. The uniqueness and contribution of this study are the preprocessing stages using ESRGAN and the testing of various models (including the intended CNN, Resnet50, InceptionV3, and Inception Resnet). Results from the model we developed matched those from the pretrained model exactly. The efficiency of the suggested strategy was proved by simulations using the ISIC 2018 skin lesion dataset. In terms of accuracy, the CNN model performed better than the Resnet50 (83.7%), InceptionV3 (85.8%), and Inception Resnet (84%) models.

Keywords: Skin lesions, convolutional neural networks, computer vision machine learning, deep learning.

I. Introduction

Cancer is the unregulated growth of tissues in a particular body part. Skin cancer seems to be one of the global diseases that is spreading the quickest. The uncontrolled growth of abnormal skin cells is a disorder known as skin cancer. Early detection and precise diagnosis are crucial for selecting a

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Feature Extraction Techniques in Medical Imaging: A Systematic Review

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Abstract:
With the surge in the development of various applications in the field of Computer Vision and Digital Image Processing, a significant amount of medical pictures are being produced. Thus, the patient-specific scan pictures represent the boundless volume of data that requires careful organization and supervision to assist clinical decision support systems. Now that retrieval, classification, segmentation, and other procedures have been completed, these devices assist doctors to uncover serious illnesses including skin conditions, tumors, and cancer. This imaging largely depends on characteristics to detect the afflicted region and perform the diagnosis visually. The authors of this paper present an overview of numerous feature extraction approaches used to extract features from medical images obtained via different modalities, but only used a handful of these techniques for this job and provided the findings.

Keywords: Medical Imaging; Feature Extraction; Imaging Modalities.

I. Introduction:

The newest imaging techniques rely on high-resolution imaging and provide radiologists access to many viewpoints. Furthermore, it provided comprehensive data to support clinical diagnoses and aid radiologists in choosing the best course of action for a patient. Radiology, another name for medical imaging, is the branch of science that involves creating various images of human body components for diagnostic purposes. Nonintrusive tests are used during medical imaging procedures to help doctors to diagnose the patients. Medical imaging techniques[2,14,23] include ultrasound, mammography, computed tomography using x-rays, magnetic resonance imaging (MRI), electrocardiography, endoscopy, Positron Emission Tomography, ultrasound, etc.,

Imaging is a crucial part of clinical medicine and is frequently used for diagnosis, care and treatment planning, and monitoring patient response. Since making diagnostic decisions has always entailed using patient information, the concept of picture similarity has important medical implications. It is extremely challenging for doctors to choose a few reasonably similar photos from a vast collection. It requires considerable amount of time and effort. Thus the creation of a humongous amount of medical data by hospitals and medical institutions in the modern day makes their interpretation a challenging undertaking requiring substantial expertise.

Any image processing system's general design will include elements for data collection, preprocessing, segmentation, feature extraction, classification, and recognition. From data purification through final detection, each of these phases executes a different operation while processing the picture data. The crucial step is feature extraction, which compresses the picture elements to reduce time and storage space. Furthermore, features are essential to any system's performance since they are used as parts of matching and recognition algorithms.

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IOT BASED HEALTHCARE MONITORING SYSTEMS IN ELECTRONIC HEALTH RECORD (EHR)

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Abstract:

With the emergence of the new corona virus, every nation today places a high value on healthcare. Therefore in this regard, the ideal response to such an outbreak is an IoT-based health monitoring system. The Internet of Things (IoT) is the next internet revolution and a rapidly expanding field of study, particularly in the field of health care. The design and implementation of a health monitoring system using the Internet of Things are presented in this study (IoT). Nowadays, with the growth of innovations, professionals are always searching for cutting-edge electronic gadgets to make it simpler to identify bodily anomalies. IoT-enabled technologies provide the door to the creation of cutting-edge, non-intrusive healthcare assistance solutions with Electronic Health Record (EHR). In particular, those with COVID-19, high blood pressure, diabetes, etc. who live in rural areas of underdeveloped nations like India lack immediate access to health or emergency clinics for testing. The cost of purchasing separate devices or frequent hospital visits is likewise high for the general public. The data

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Evaluative Study of Machine Learning Classifiers in Predicting Heart Failure: A Focus on Imbalanced Datasets

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CVD, classification techniques, heart failure prediction, relevant features, SMOTE

ABSTRACT

Heart disease persistently remains a paramount health concern globally, necessitating early and precise detection for effective therapeutic intervention, particularly within the realm of cardiology. This study proposes a predictive model for heart failure, utilizing six distinct machine learning classification algorithms—Stochastic Gradient Descent (SGD), Logistic Regression (LR), Decision Tree (DT), AdaBoost, Support Vector Machine (SVM), and Random Forest (RF)—and assesses their performance on an imbalanced heart failure clinical record dataset obtained from Kaggle. Consisting of 299 observations, the dataset comprises 32.11% of instances resulting in death and 67.89% marking recovery or survival, thereby presenting a significant imbalance. This imbalance potentially contributes to a suboptimal prediction of the non-death instances. To address this issue, the Synthetic Minority Oversampling Technique (SMOTE) is employed. The performance of each classifier is evaluated using measures such as accuracy, precision, recall, and F-score. Experiments are conducted on the complete feature set and a selected subset of features, focusing particularly on highly correlated features. The results from these experiments are then juxtaposed with those derived using the comprehensive feature set. The outcome of these comparative analyses reveals superior performance by the RF algorithm over other tree-based and statistical-based models, thereby achieving enhanced accuracy. This study, therefore, presents an in-depth evaluation of machine learning algorithms in predicting heart disease, contributing significantly to the ongoing research in cardiology and machine learning.

1. INTRODUCTION

Over the past two decades, Cardiovascular Disease (CVD), also known as heart disease, has emerged as the leading cause of death globally, claiming more lives annually than any other disease. The term "Cardiovascular Disease" encompasses a range of heart and circulatory system disorders. As the World Health Organization (WHO) reported, Cardiovascular Disease (CVD) was responsible for 17.3 million, or 30% of all global deaths in 2008. Among these, coronary heart disease led to 7.3 million deaths while stroke was responsible for 6.2 million fatalities. The urgent need to tackle this issue underscores the necessity for a system capable of effectively predicting heart failure, potentially saving countless lives.

Key factors such as high blood pressure, cholesterol level, and diabetes are instrumental in detecting heart disease. With the rapid rise in heart disease cases, there is an increasing demand for the incorporation of machine learning techniques for effective decision support. This could help in reducing the increasing prevalence of heart disease by enabling early detection. However, the imbalance between benign and malignant observations in heart failure prediction datasets poses a significant challenge in machine learning-based heart failure prediction.

Heart failure prediction is essentially a binary classification problem, where an observation falls into one of two categories: malignant or benign. However, in real-world scenarios, non-death instances tend to outnumber death instances, resulting in a greater number of benign observations in datasets than malignant ones. This imbalance in the dataset makes it challenging for machine learning algorithms, leading to inaccurate predictions for the minority class (malignant). Because the majority class is learned more frequently by the machine learning algorithm, traditional models tend to predict the majority class (benign) with greater accuracy, resulting in a bias.

To address this issue, this study proposes the development of a system using machine learning that could aid professionals in the early detection of heart disease, thereby reducing the associated risks. Six machine learning models were utilized: Random Forest (RF), Stochastic Gradient Descent (SGD), Decision Tree (DT), AdaBoost, Logistic Regression (LR), and Support Vector Machine (SVM) [1-2].

To address the problem of class imbalance, the Synthetic

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A Novel Bi-LSTM Based Automatic Image Description Generation

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Bi-LSTM, image captioning, inception-v3, NMFO optimization

ABSTRACT

Image captioning is the process of creating a textual description of an image. Due to its importance in various fields, it has emerged as the latest and hot research problem. It uses Computer Vision techniques to process an image and Natural Language Processing to generate the caption. Our proposed approach uses the Bi-LSTM (Bi directional Long Short Term Memory) approach to generate the image description. We also propose the Novel Moth Flame Optimization (NMFO). This model uses the correlation-based logarithmic spiral update. The novel proposed model is demonstrated on standard datasets like Flicker 8k, Flicker 30k, and MSCOCO datasets using standard metrics likeBLEU, CIDEr. Performance of various metrics on various datasets shows that our novel Bi-LSTM approach gives better performance when compared to our traditional approaches.

1. INTRODUCTION

The general objective domain of Image captioning is to produce English captions to describe images and videos. It is a challenging task. It requires not only object identification, but also the relation among the objects. Image Captioning is important in applications like helping blind people who have the world around, Content-Based image retrieval, bringing visual intelligence to robots, lung cancer detection, web searching, and retrieving images from XML documents. Social networks like Twitter, and Facebook directly generate captions for the images.

Image captioning is easy for humans as it has neurons and its interconnections among them. Initially, this captioning identifies the objects present in the image, their attributes, and the association among the objects, scenes, and scenic locations. Then, it uses the existing templates and grammatical structures to convert the "description data into a sentence with semantics". But it is a difficult task for machines unless it is trained using better models. The descriptions include where we are and what we wear etc.

In earlier days researchers used basic features like SIFT, HoG, and LBP, and blending of those features is generally used, and features are passed to any one of the classifiers to classify an object. The handcrafted features are task-specific, extracting features from a large and diverse set of data are not feasible.

Deep learning-based algorithms, on the other hand, learn features automatically from training data and can handle massive collections of images and videos. The concerns present in caption generation have emerged as the broader analysis topic in the field of Computer Vision and NLP. Many research works [1-9] proved that deep learning-based approaches can handle the issues raised in image captioning very well. Most of the previous works take the encoder-decoder pattern by using a deep CNN as an encoder to the input image and an additional RNN is used to generate the output caption.

Image captioning is divided into three categories a) Template based b) Retrieval based c) Novelty based. The majority of deep learning-based techniques fall under the area of creating new image captions.

Mao et al. [10] combine visual and textual information using the multimodal layer. But it ignores the intrinsic relations between the predicted words and corresponding visual regions of an image.

An effective proposed approach for image captioning systems must be able to recognize a picture properly while also producing a syntactically valid sentence. The major objective of the image captioning model is to lower the number of classification errors in a sentence composed of several words. To overcome these challenges, we adopt a Bi-LSTM model in this research, in which we deploy a novel optimization approach called the NMFO algorithm to improve the image captioning system's performance. The following are the primary contributions of our study. A novel image caption generator approach is described that extracts features by using the inception v3 model, which is a widely used image recognition model that offers enhanced accuracy on the "Flickr8k dataset" and the "COCO dataset".

For exact image captioning and classification, an Optimized Bi-LSTM model is created, with training taking place under a meta-heuristic model with the suitable tuning of epochs. A novel upgraded logic (logarithmic spiral update based on correlation) is proposed in this research for optimization purposes.

The paper is organized into various sections: In the related work section, a transitory overview of present approaches is discussed. In the proposed model section we describe the novel image caption generation model is elaborated. The methodology followed to carry out our proposed work is discussed. Experimental results discuss the obtained results, Conclusion-The given work is concluded.

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PERFORMANCE EVALUATION BY FEATURE REDUCTION USING DEEP LEARNING FOR IDENTIFYING MALICIOUS WEBSITES

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ABSTRACT

Now a days, Internet activities are growing in exponential rate so are the criminal activities, with the growth of internet usage. Internet is also a source of malicious web pages. Automatic Malicious URL identification resulted a relative novel and sensitive security challenging area. The area would aim in aiding the users to overcome security threats due to the presence of malicious webpage's resulting in a better network security. The present study makes attempt in assessing and identifying malicious websites, a malicious identification model is proposed using deep learning ideas. The present work uses the URL and HTML based features to identify malicious websites. PCA is applied to reduce features, dominating features are identified. It is found that dominating features play vital role in segregating the URLs into malicious and non-malicious. Dataset from PhishTank and Alexa is used in this study. Seven Layer Neural Network has shown significant improvements resulting in accuracy of 94%. The proposed work gave true-positive rate 95.51 and False-malicious rate 9.51.

Keywords: *PCA, Neural Network, TMR, FMR.*

1. INTRODUCTION

The usage of Internet has grown exponentially and has become indispensable for humans. Such tedious usage has become vulnerable for hackers, intruders, attackers, etc., to perform non-social activities and for financial gains. Drive-by download, phishing, and social engineering & spamming are regarded as trivial attacks. If a user accesses the malicious webpages through their personal devices with no perception, malicious scripts sometimes launch attacks to put in scalawag programs, steal personal identities and credentials, or perhaps manage (take control) the victim's machine. Prevention is better than cure is more appropriate even for this menace. Identifying and isolate the malicious websites is need of the hour. Each time when the users decide to access unknown websites or click on an unfamiliar URL, a sanity check must be performed to evaluate the associated risk of visiting that website and the challenges that might be encountered.

Initially all the features in the dataset is used, each feature is given equal importance and features are not prioritized. The redundancy in the dataset is not identified and removed. As a result, training and testing of the models used additional computation power (in terms of epochs) and resources (in terms of memory). In this paper, explore a machine learning-based classification algorithm, capable of predicting whether a website is malicious or benign by analyzing HTML tags representing a Web page and URL components. To identify dominated features in two ways. By use of Deep Learning, focuses on automatically identifying the dominated features from the dataset. By use of PCA, focused on using linear algebra techniques to identify the dominated features form the data set. As resulted in reduction of the data set dimensionality for training without compromising on the performance results. Further reduced the number of epochs required

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A Framework for Blended Sub Feature Engineering for Chronic Disease Prediction Using in-Memory Computing

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Keywords:
chronic disease, feature selection, sub feature engineering, in-memory computing, prediction

ABSTRACT

Chronic diseases are among the most frequent major health concerns. Early detection of chronic illnesses can help to avoid or lessen their repercussions, potentially lowering death rates. It's an innovative technique to use machine learning algorithms to identify dangerous variables. The problem with existing feature selection procedures is that each method gives a unique collection of features that influence model validity, and current methods are incapable of performing effectively on large multidimensional datasets. We would want to present a novel model that uses a feature selection strategy to choose ideal features from large multidimensional data sets to deliver credible forecasts of chronic diseases while preserving the uniqueness of the data. To assure the success of our proposed model, we used balanced classes by applying hybrid balanced class sampling methods to the original dataset, as well as methods to provide valid data for the training model, characterization and data conversion are required. Our model was run and assessed on datasets with binary and multi-valued classifications. We utilized a variety of datasets (Parkinson's disease, arrhythmia, breast cancer, kidney disease, and diabetes). To select suitable features, the hybrid feature model is used, which includes six ensemble models and involves voting on attributes. The accuracy of the original dataset before applying the framework is recorded and compared to the accuracy of the reduced set of characteristics. The findings are given individually to allow for comparisons. We can conclude from the results that our proposed model performed best on multi-valued class datasets rather than binary class characteristics.

1. INTRODUCTION

Chronic illnesses are widely recognized as the most severe and deadly diseases in humans. The rising prevalence of chronic illnesses with high death rates poses a considerable danger and burden to healthcare systems globally. Chronic illnesses are more common in males than females, especially in middle- and old-age populations, while youngsters with similar health conditions exist. When educated on appropriate data, machine learning algorithms can be excellent in identifying illnesses [1]. Heart disease datasets are freely available for model comparison. With the advent of machine learning and artificial intelligence, academics may now construct the greatest prediction models by employing the massive databases that are now available. The latest evidence on heart-related issues in adults and children has emphasized the importance of lowering chronic disease mortality. Because the clinical datasets supplied are inconsistent and redundant, proper pre-processing is essential. It is critical to choose the key traits that may be employed as risk factors in prediction models. Various supervised models using feature selection methods such as AdaBoost (AB), Decision Tree (DT), Gradient Boosting (GB), Stochastic Gradient Descent (SGD), Lasso Regression (Lassos), and Random Forest (RF) are used in this work, along with classifiers. The findings are compared to previous research [1].

2. RESEARCH OBJECTIVE AND SCOPE

The goal of this study is to create an efficient multi-level feature selection technique. that eliminates extraneous characteristics without compromising data originality to acquire proper features that help in quicker processing and output.

The following are the actions that must be taken:

- To test the performance of a more dependable feature selection model, five datasets are employed.
- Six selection strategies are incorporated, and a hybrid model is built to extract the most important characteristics from medical references based on rank values.
- The framework's performance is assessed using binary and multivalued class datasets.

3. LITERATURE REVIEW

Feature extraction applications pose new challenges in the selection of streaming features [2]. The feature extraction applications have several characteristics, including a) characteristics are evaluated consecutively with a set number of occurrences; and b) the trained model does not exist in advance. In a text mining assignment for spam filtering, for

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A Novel Architecture for Feature Extraction and Convolution for Image Segmentation of Pathology Detection from Chest X-Ray Images

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Keywords:
feature extraction, chest x-ray image, neural networks, computer-aided diagnosis, machine learning algorithms

ABSTRACT

Neural networks are widely used for the automation of analysis and classification tasks in the field of medical image processing. They have successfully achieved state of the art performance in medical image segmentation and feature extraction techniques. This automatic classification in the medical field is very helpful in developing tools for early detection of dreadful pathologies, like tuberculosis and pneumonia, in areas where access to doctors or radiologists is scarce. In this work, we propose a novel approach for the classification of lung pathologies like tuberculosis and pneumonia by masking them in boundary boxes using convolutional neural networks. Our solution provides a flexible way, by using saved trained models that could be directly employed by the Radiologists. In this paper, we describe the architecture required to achieve such a scalable model which could be used by doctors and radiologists without too much training in the technologies of the times. The proposed convolutional architecture consists of connected components which are parallel residual blocks and sampling layers. The images do not lose their original quality, giving the best error free predictions. We visualize this model to be deployed in labs, providing access to medical imaging expertise to some of the most remote places in the world.

1. INTRODUCTION

One of the most difficult tasks in the medical areas is identifying the diseases, although this is still an epidemiological study. Over a million individuals visit hospitals, and over 50,000 people pass away from tuberculosis. Human immunodeficiency virus infections, bacterial resistance to medicines, a rise in the number of homeless people and drug users, and other factors are said to be contributing to the remarkable rate at which these diseases are spreading [1, 2]. Tuberculosis is an infectious disease that affects the lungs, caused by Mycobacterium; doctors term the infected, affected regions to be bacillus. If a patient is diagnosed with bacillus in a lung x-ray, it will be termed as a tuberculosis positive spectrum smear. According to the World Health Organization, if one bacillus is present in 100 images, a minimum of 100 fields are examined to declare the positive sputum smear [3]. To identify this bacillus (or) the affected areas in the lungs, we need to be precise in color, shape, and edges. This can be extracted using image processing or pattern recognition techniques. Previously, research scientists used traditional machine learning and computer vision techniques, like, support vector machines, multi-layer neural networks that dealt with many expenses to detect the spectrum spear. The CAD (Computer- aided diagnosis) is used before machine learning algorithms [4] which follows four steps in finding the anomaly of the given CXR images. These include pre-processing, segmentation, feature extraction, and classification. However, CAD systems only use computer vision techniques in finding the affected regions and turns out that they couldn't beat the human level accuracies. Later in the year 2012, when deep learning became popular due to its end to end architectures, it could extract features of the methods using which pathologies could be identified in the given CXR images.

Manual screening, which is inaccurate and unreliable, requires a lot of human labour to determine whether a bacillus or any diseases are present in the lungs. In order to analyse the anomalies present in the lungs from a given x-ray image of the lungs with little to no human influence, we therefore require an automated approach. The idea to use k-nearest neighbours to automatically diagnose tuberculosis was put forth by Van Ginneken et al. [3]. The area under the curve (AUC) value, which gives a value of 0.82 on 388 photos of a TB data set and 0.98 on 200 images of lung diseases, is the main classification parameter in his method utilising KNN [5]. This score is derived from the combination of the intersection of different detected regions of the overall system.

In this paper Presents chapter 2 to related work of Classification techniques and discovered research gap, In chapter 3 presents the Convolution segmentation methods and implementation techniques of network training in chapter 4 and results Comparison between existing and new Classification Techniques, finally Concluding in the chapter 6.

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A Survey on Sugarcane Leaf Disease Identification Using Deep Learning Technique(CNN)

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Abstract— The management of plant diseases is vital for the economical production of food and poses important challenges to the employment of soil, water, fuel and alternative inputs for agricultural functions. In each natural and cultivated populations, plants have inherent sickness tolerance, however there also are reports of devastating impacts of plant diseases. The management of diseases, however, within reason effective for many crops. sickness management is allotted through the employment of plants that square measure bred permanently resistance to several diseases and thru approaches to plant cultivation, like crop rotation, the employment of pathogen-free seeds, the given planting date and plant density, field wetness management, and therefore the use of pesticides. so as to enhance sickness management and to stay up with changes within the impact of diseases iatrogenic by the continued evolution and movement of plant pathogens and by changes in agricultural practices, continued progress within the science of soil science is required. Plant diseases cause tremendous economic losses for farmers globally. it's calculable that in additional developed settings across massive regions and lots of crop species, diseases usually cut back plant yields by ten percent per annum, however yield loss for diseases usually exceeds twenty percent in less developed settings. Around twenty-five percent of crop losses square measure caused by pests and diseases, the Food and Agriculture Organization estimates. to unravel this, new strategies for early detection of diseases and pests square measure required, like novel sensors that sight plant odours and spectrographic analysis and bio photonics that may diagnose plant health and metabolism. In artificial neural networks, deep learning is an element of a broader family of machine learning approaches supported realistic learning. Learning is often controlled, semi-supervised or unmonitored. to handle several real-world queries, Deep Learning Approaches are normally used. so as to differentiate pictures and acknowledge their options, coevolutionary neural networks have had a larger result. This article will do a Leaf Disease Identification Survey with Deep Learning Methods. It takes Sugarcane leaf as an instance to our paper.

Keywords-: Deep Learning Approaches; Plant Leaf Disease Identification; Sugarcane Leaf; Image Classification; Diagnosis of Leaf Disease; Convolutional Neural Networks.

I. INTRODUCTION

In the world economy farming plays an important role, however the triste factor is that it's ruined by crop diseases worldwide. Places square measure noted as a significant supply of nutrition for each human and animals then it's not solely very important to save lots of plants however conjointly their leaves. it's necessary to work out infected leaves full of disease; this can facilitate farmers shield them from seeding before economic losses square measure reduced by gather. However, manual labor will put a major burden on work, making automatic diagnostics and disease detection a tool which adds to agricultural production and also helps to optimize crop production. Agriculture is an important component of global budget, since it offers food security. In current years, however, plants in various diseases have been found to be highly infected. This causes massive economic losses in agriculture worldwide. The management of hand-to-hand fruit disease by automated plant disease detection methods is difficult to mitigate. Sugarcane belongs to **Saccharum** [1]. Almost 70% of sugar produced as a major industrial crop globally is sugar cane. Contrary to other significant crop production efforts to grow sugar cane, the interspecific hybrids first appeared around eighty years ago were small and relatively recent. A limited gene pool, a diverse generate, low fertility and long breeding/selection time as well as the strongly polyploid and mostly aneuploid herb impedes development in traditional cane

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Original Research Paper

An Efficient Video Compression Framework using Deep Convolutional Neural Networks (DCNN)

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Abstract: In the current world, video streaming has grown in popularity and now accounts for a large percentage of internet traffic, making it challenging for service providers to broadcast videos at high rates while utilizing less storage space. To follow inefficient analytical coding design, previous video compression prototypes require non-learning-based designs. As a result, we propose a DCNN technique that integrates OFE-Net, MVE-Net, MVD-Net, MC-Net, RE-Net, and RD-Net for getting an ideal collection of frames by linking each frame pixel with preceding and following frames, then finding linked blocks and minimizing un needed pixels. In terms of MS-SIM and PSNR, the proposed DCNN approach produces good video quality at low bit rates.

Keywords: Deep Neural Networks, Encoding, Decoding, Video Compression

Introduction

People who watch videos on the internet are about 90%, this is expected to rise in the near future. As a result, an effective video compression model is required to deliver higher-quality frames while using less bandwidth.

Video codecs compress videos using hand-drawn models. Despite their superb design, the present models are poorly optimized. The video compression process can be improved even more by tweaking the entire codec model.

Deep neural networks have outperformed classic picture codecs like the Joint Photographic Experts Group in video compression. Deep neural network-based models that rely on extremely nonlinear transformations require end-to-end training.

It's not easy to create a model that uses a variety of video compression algorithms. Motion estimation, which creates and compresses motion data, is the most important part. To remove temporal redundancy, video compression significantly relies on motion information. The only way to express motion vectors is to use an optical flow net. Although learning-based optical flow estimation focuses on obtaining exact flow data, proper optical flow isn't always the best solution for specific video applications. Furthermore, the ability of optical flow data is greater than that of existing models, resulting in high bit rate information when optical flow values are directly compressed using existing methods.

Reduced rate-distortion aims to provide higher-quality reconstructed frames at the same bit rate. It is essential for proper video compression to technique.

Rate distortion must be decreased to achieve the benefits of end-to-end training for deep learning-based video compression models. The following are the model's key benefits: All steps of the DCNN model are implemented using deep neural networks. The DCNN model is based on rate-distortion and uses a single loss function to combine all of the steps, resulting in a high compression ratio. This study will aid researchers working on computer vision, video compression, and deep model creation.

Related Work

Kumar and Janaki (2020), the video compression task can be categorized into three types. They are the classical era, the era of generic heuristics, and the era of modern techniques with deep learning. Through the detailed study of the literature through the past decades, it is learned that various schemes have been proposed for video compression. These schemes have contributed a lot of efficient mechanisms in different ways. However, further improvements are also needed towards the same pertaining to the limitations observed as specified.

Birman *et al*. (2020), illustrate and explain various issues for the video compressionprocess in the field of DNNs. ,Still

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A HYBRID APPROACH FOR OPTIMIZED VIDEO COMPRESSION USING DEEP RECURRENT AUTO ENCODERS (DRAE) TECHNIQUE

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ABSTRACT

Presently, the data traffic is increasing for video conferencing, online education, gaming and watching videos on Netflix, Amazon Prime, YouTube and other OTT platforms. And, the service users are always demanding high definition and high-quality video facilities day by day. However, in order to transmit video data across the Internet's constrained bandwidth effectively, video compression is a necessary task. In last few decades, various video compression algorithms, such as non-learning and learning were standardized. But still some improvements are needed for effective video related services. We propose a deep learning based Deep Recurrent Auto Encoders (DRAE) approach which contain various modules for implementing an efficient video compression technique. The experimental outcome shows our model achieves state-of-the-art learned video compression performance in terms of both PSNR and MS-SSIM.
Keywords: *Video, Compression, Deep Neural Networks, Recurrent Auto Encoders.*

1. INTRODUCTION

Nowadays, video content contributes to more than 80% internet traffic, and the percentage is expected to increase even further. Therefore, it is critical to build an efficient video compression system and generate higher quality frames at given bandwidth budget.

Modern digital video looks as impressive as it does is because of the sheer amount of information digital cameras can capture. This informational data is what creates the crisp details and vivid saturation of modern video. The problem is that it takes a ton of data to capture these beautiful videos. So much data that you may find your computers and hard drives filling up quickly due to the hefty storage demands of your video, not to mention the extremely long wait times for uploading or sharing these videos to online platforms. Luckily, compression offers the solution of taking the vast amounts of data that cameras generate and interpreting it in a way that is more efficient, creating new files that are only a fraction of the file size! The only way you'll be able to share, upload, stream and store all of your great video content with any regularity is by compressing it. The trick is to know "good" compression from "bad" compression. The objective of "good" compression is to minimize the file size as much as possible with the least amount of image quality reduction by removing things like redundant or non-functional data from your video file.

Internet traffic has recently been dominated by video-related applications including video on demand (VOD), live streaming, and ultra-low latency real-time communications.

Due to the ever-increasing demands for resolution ([1] and [2]), and fidelity, more effective video compression is required for content transmission and storage, and therefore for successful implementation of networked video services ([3], [4]). Video compression systems develop suitable techniques to reduce

Comparison of Neural Network classifiers for handwritten digit recognition with multiple feature extraction methods

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Abstract: *The handwritten digits classification problem is considered as a core to a variety of emerging areas like computer vision and machine learning applications. So many machine learning techniques have been used to solve the handwritten digit recognition. Classifying the various handwriting digits of a person from one another is a challenging task because each one has a unique way of handwriting styles. This paper focus on different Neural Network (NN) approaches for classification of handwritten digit images. The most four famous NN approaches used here are Multi-Layer perceptron (MLP), Radial Basis Function (RBF) neural network, Probabilistic neural network (PNN) and a convolution neural network (CNN). The selection of the classifiers and the number of features play a vast role in achieving best possible accuracy and performance of classification. The main motive of this work is to find out the best neural networks mechanism among the four which can give an acceptable accuracy rate using a least number of particular features. The experimental results show that CNN algorithm gives better recognition rate than MLP, RBF and PNN.*

Keywords: Neural Network Classifier, MNIST Dataset, Accuracy, Handwritten Digits, Error Rate.

1. INTRODUCTION

The segmentation and recognition of handwritten text on scanned documents has permitted different areas like editing of books and historical documents, finding the words in those documents etc. For the determination of expanding human memory and for enabling communication, the handwriting context has existed for millennia. From the beginning of the documented history, individual humans are required to understand and identify the handwriting of the other humans. The meaning of the word handwriting is defined as a surface containing the non-natural graphic characters conveying some information through the mark's predictable relation to a particular language. The development and culture could be attributed to the beginning of the handwriting. Because of the necessity of the Optical Character Recognition in so many applications, the off-line handwritten recognition research awakened great interest in researchers. Researchers focused their attention on attempting to mimic the intellectual behavior of the human mind driven by the curiosity to uncover the secrets. One such example is to read and recognize both handwritten and printed matter that attempt to imitate the human ability.

Historically the Optical Character Recognition machines have developed in three successive stages. The early one started in 1900 by the Russian scientist Tyurin, who attempted to assist visually challenged people by developing a machine. The first stage of the work was concentrated on machine printed character and small sets of handwritten symbols, text. The technique used in this stage, to recognize machine printed text is Template matching. For handwritten, features of the input text were

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Comparative Study on Techniques Used for Anomaly Detection in IoT Data

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Abstract:-The Internet of Things (IoT) makes it possible to connect various devices using wireless and cellular technology. As the foundation of Internet of Things (IoT), data from the target regions are gathered by widely dispersed sensing devices and delivered to the processing unit for aggregation and analysis. IoT service quality typically depends on reliability and integrity of data. However, IoT data gathered will be anomalous because of the unfavourable environment or equipment flaws. In order to ensure service quality, an efficient technique of anomaly detection is therefore essential. Finding new or unexpected things in the collected data is called Anomaly detection. The most important developments in recent years that enable automatic feature extraction from raw data are deep learning and machine learning. Role of machine and deep learning techniques to detect anomalies in sensor data is reviewed in this article. Finally, we provide a summary of the difficulties encountered currently in the anomaly detection field to identifying potential future research prospects.

Keywords: IoT, Anomaly, Machine Learning, Deep Learning, Time Series, Data Stream

1. Introduction

By 2025, the number of devices, which are connected in IoT networks is predicted to reach nearly 75 billion, which is three times of world's population [1]. Internet of Things (IoT) is network of disparate items that are linked to the Internet using a variety of technologies, including smartphones, laptops, intelligent devices, and sensors. The Internet of Things (IoT) allows direct user-free communication between various sensors and devices. .IoT is used in many applications like Agriculture, Industry, Smart Cities, Healthcare, and Home Automation. From the past few years, IoT has become the largest data sources. Because of flaws in sensors or environment an unexpected event may be observed in IoT data. Unexpected events in IoT data are called Anomaly. Analysing the collected data and identifying the anomalies is called Anomaly detection. Most of the IoT data is time series data. Time series data may be univariate time series data (data collected from a sensor at different time intervals) or multi variate time series data (data collected from multiple sensors at different time intervals).

Types of Anomalies

a) Point Anomalies

The one kind of anomalies are point anomalies. The time series' return to its prior normal state within a very brief time frame of only a few observations is a key feature of these anomaly types. These point anomalies might be statistical noise, they might be caused by malfunctioning sensing apparatus, or they might be an important short-term event that the system's operators are interested in.

b) **Contextual Anomalies:**

These are sequences are observations that deviate from the time series' anticipated patterns but, when considered separately, may fall within the acceptable range for that signal. An anomaly that deviates from the standard when viewed in the light of the nearby observations is called a contextual anomaly.

Prediction of Human Suicidal Tendency based on Social Media using Recurrent Neural Networks through LSTM

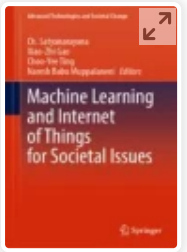
Publisher: IEEE

Rohini Kancharapu ; A SriNagesh ; M BhanuSridhar **All Authors**

Textual Dissection of Live Twitter Reviews on Corona Vaccines using Various Machine Learning Algorithms

Publisher: IEEE

Rohini Kancharapu ; A Sri Nagesh **All Authors** •••



Machine Learning and Internet of Things for Societal Issues pp 97–107

Sentiment Extraction from English-Telugu Code Mixed Tweets Using Lexicon Based and Machine Learning Approaches

Arun Kodirekka & Ayyagari Srinagesh

Chapter | First Online: 25 February 2022

Part of the Advanced Technologies and Societal Change book series (ATSC)

Abstract

Age and Gender Prediction using Gated Residual Attention Network

Publisher: IEEE

Muppalla Jhansi ; Kankanala Divya Sri ; Kavula Hemanth Chowdary ; Mundru Adithya Kumar ; Ch. Aparna **All Authors**

Abstract: While a great deal of researchers has addressed the challenge of determining the age and sex from face images, these have received significantly fewer spotlights than som... **View more**

Metadata

Abstract:
While a great deal of researchers has addressed the challenge of determining the age and sex from face images, these have received significantly fewer spotlights than some other challenges that are particularly linked with face recognition. Relatively to certain other face recognition concerns, the level of performance in this area has not increased significantly. Despite the progress made in age and gender prediction, several challenges like Facial variability, Data

Congress on Smart Computing Technologies

CSCT 2022: **Congress on Smart Computing Technologies** pp 15–22

A Convolution Neural Network Model to Classify Handwritten Digits from Skeletons

Venkateswara Rao Naramala

Conference paper | First Online: 11 July 2023

Part of the Smart Innovation, Systems and Technologies book series (SIST,volume 351)

Abstract

R.V.R.& J.C COLLEGE OF ENGINEERING(AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

Academic year :2021-2022

RESEARCH PAPERS PUBLISHED BY FACULTY MEMBERS IN JOURNALS/BOOK CHAPTERS:

S.NO	Journals -Conferences	Total
1	International Journals	30
2	International Conferences	1

Indexing	SCI	WOS	Scopus
		15	4

SNO	Title OfThe Paper	Indexing
1.	Dr.B.VaraprasadRao,K.SrinivasaRao,E.Ramesh, N.Kiran Kumar, "A Hybrid group acceptance sampling plans for life test based on half logistic distribution" Turkish Online Journal of Qualitative Inquiry(TOJQI),Vol.12(7),1293-1301,July,2021.	Scopus
2.	Y Sangeetha,SankaraRao M,A Sri Nagesh,TulasiRadhikaP,Sunanda N,B RudraPrathap, "Authentication of symmetric cryptosystem using anti-aging controller –based true random number generator" Applied Nanoscience,Vol.(8),August,2021.(Web of science)(DOI:10.1007/s13204-021-01977-3)	Web of science
3.	G.S.Raghavendra, Shanthi Mahesh, M.V.P.ChandraSekhara Rao "Prediction of Accuracy in Emergency Health Records using Hybrid Machine Learning Model" Journal of Pharmaceutical Research International,Vol.33(58A), 206-212,Dec.2021.(Web of Science).	Web of science
4.	N.HanumanthaRao,A.SriKrishna,K.GangadharaRao "Rider and Sunflower optimization –driven neural network for image classification" Web Intelligence,Vol.19(1-2),41-61,Dec,2021 .(Web of Science/Scopus Indexed).	Web of Science Scopus
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23.	Dr.B.VaraPrasad Rao "An efficient machine Learning model for Clinical support to predict heart disease", International Journal of Computer science and Network and network security",june 2022	Web of Science
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30.	P.RamaKrishna,"BigData Image and video Analysis Using Deep Learnig ",International Journal of Computer science and Network and network security",April 2022.	Web of Science

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2021-2022

RESEARCHPAPERSPUBLISHEDBY FACULTYMEMBERSINCONFERENCE/BOOKCHAPTERS:1

Sno	Conference paper
1	**RohiniKancharapu A Sri Nagesh, "Textual Dissection of Live Twitter Reviews on Corona Vaccines using Various Machine Learning Algorithms"** 2022 InternationalConference on Breakthrough in Heuristics And Reciprocation of Advanced Technologies (BHARAT)", DOI: 10.1109/BHARAT53139.2022.00023, 07-08 April 2022, Electronic ISBN:978-1-6654-3625-0, Visakhapatnam, India.

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REVIEW ARTICLE

Authentication of symmetric cryptosystem using anti-aging controller-based true random number generator

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Abstract
In today's digital world, data protection is extremely important. Every company's data is a valuable asset, so it's important to ensure that it's secured from outside threats. Information security is not only an effective but also a necessary element to protect data from unauthorized access. The confidentiality of any communication system is strengthening with the help of random number generators along with some analog circuitry. This type of analog models demands more power and area. So analog circuit-based hardware Random Number Generators (RNG) are least preferred over digital RNGs. To improve the security every industry depends on the one-time password (OTP). Which gives the security but generation of the OTP is very easy. Random number generator is used for the generation of OTP. Similarly, hacking such OTP is easier than creating them. This paper introduces the Anti-Aging controller TRNG, a highly stable high-performance random number generator Anti-Aging Cryptographically Secured True Random Number Generator (AACTRNG). Implementation of this work can be done by using TANNER EDA Tools and ModelSim-Altera 6.4a (Quartus-II 9.0) used for the simulation to retrieve random numbers.

Keywords Random number generator · Cryptography · TRNG · AES

Introduction

Security is the more important in digital life. Data transfer through electronic gadgets is faster compared to conventional data transfer methods. In present days data security is concerned along with data transfer rate. Key generation is the crucial factor in data security (Garcia-Bosque et al. 2019). In earlier days key is transmitted along with data over a transmission medium which is more vulnerable to data hackers. So key generation is a primary concern in secure data transfer.

Data are a powerful tool for every company and is therefore very important to protect it from external attacks. Protection of information is not only an interesting but necessary feature to safeguard data from unauthorized access. The key factors for data security are data encryption, decryption and key management. One such option of data securement is random sequence generation (Abdullah et al. 2018b). Random numbers can be generated using the LFSR pseudorandom property with different cryptographic applications.

The Random Number (RNG) Generators (RRNG) produce random numbers (PRNGs). While in most applications, random numbers are required, output is often ignored. Key generation of cryptosystems is important. Various primary application-dependent generation processes are used (Patnala et al. 2020a). Because of their deterministic existence, many digital systems use PRNGs. In the seed selection number pool, all variations of the input devices are stored. This seed produces the PRNG keys. During key generation, attackers can predict data. Due to deterministic PRNG. One such method must not be to generate the key via the

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Prediction of Accuracy in Emergency Health Records using Hybrid Machine Learning Model

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

The quantity of digital information contained in electronic health records(EHR) has increased dramatically during the last ten years. Numerous researchers have discovered that these records may be used for a variety of other purposes as well, including applications in clinical informatics. Additionally, within the same time period, significant advancements in the area of deep learning have been made by the machine learning community. Using EHR data, we examine the existing research on applying deep learning to clinical activities. In this article we will discuss various deep learning techniques used for the classification of electronic health records along with proposing of Hybrid model for finding classification accuracy of various models.

Keywords: MHR; CNN; botlzmann machine; hybrid model; naïve bayes.

1. INTRODUCTION

Recently, most approaches for assessing large amounts of EHR data have relied on traditional machine learning and statistical techniques like as logistic regression, support vector machines, and support vector machines with reinforcement learning. Machine learning methods such as support vector machines (SVMs) and random forests are examples. Deep learning techniques have recently seen great success in a wide range of areas. Effectively capturing long-range connections in data is a challenging task. Domains are created via the use of deep hierarchical feature generation and the capture of long-range relationships in data. Because of the

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Rider and Sunflower optimization-driven neural network for image classification

Article type: Research Article

Authors: Nadendla, Hanumantha Rao (https://content.iospress.com:443/search?q=author%3A%28%22Nadendla, Hanumantha Rao%22%29)[a; b; *] | Srikrishna, A. (https://content.iospress.com:443/search?q=author%3A%28%22Srikrishna, A.%22%29)[c] | Rao, K. Gangadhara (https://content.iospress.com:443/search?q=author%3A%28%22Rao, K. Gangadhara%22%29)[d]

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Abstract: Image classification is the classical issue in computer vision, machine learning, and image processing. The image classification is measured by differentiating the image into the prescribed category based on the content of the vision. In this paper, a novel classifier named RideSFO-NN is developed for image classification. The proposed method performs the image classification by undergoing two steps, namely feature extraction and classification. Initially, the images from various sources are provided to the proposed Weighted Shape-Size Pattern Spectra for pattern analysis. From the pattern analysis, the significant features are obtained for the classification. Here, the proposed Weighted Shape-Size Pattern Spectra is designed by modifying the gray-scale decomposition with Weight-Shape decomposition. Then, the classification is done based on Neural Network (NN) classifier, which is trained using an optimization approach. The optimization will be done by the proposed Ride Sunflower optimization (RideSFO) algorithm, which is the integration of Rider optimization algorithm (ROA), and Sunflower optimization algorithm (SFO). Finally, the image classification performance is evaluated using RideSFO-NN based on sensitivity, specificity, and accuracy. The developed RideSFO-NN method achieves the maximal accuracy of 94%, maximal sensitivity of 93.87%, and maximal specificity of 90.52% based on K-Fold.

Keywords: Image classification, Weighted Shape-Size Pattern Spectra, Rider optimization algorithm, Sunflower optimization algorithm, neural network

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EXTRACTION OF EMOTION CORRELATION OF PATIENTS BY USING MACHINE LEARNING MODELS

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ABSTRACT

Emotion recognition has become a challenging task in the field of natural language processing since there is a large amount of data available on the Internet. Different methods are used to recognize emotion. In this paper, CNN-LSTM and logistic regression are used to recognize emotion. Most of the work in the field of artificial intelligence focuses only on the recognition of emotions, rather than exploring the reasons why emotions are not recognized or misrecognized. The correlation between emotions leads to the failure of emotion recognition. Here, we fill the gap between emotion recognition and emotion correlation. The emotion correlation is extracted by using confusion of emotion and evolution of emotion. Emotion correlation is based on the emotion recognition results of the machine learning models by using text.

Keywords: Affective computing, logistic regression, convolution neural network (CNN), long short-term memory (LSTM), deep neural networks, emotion correlation, emotion recognition, natural language processing (NLP)

I. INTRODUCTION

Emotions are a decisive aspect of the human condition. They penetrate into our social and professional lives, affect our thinking and behaviour, and profoundly shape our interpersonal relationships and social interactions. There are different levels of emotions: Individual emotion and public emotion.

Minimal Keyword Extractions for General and Bio Medical Documents: A Survey

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Abstract

The most crucial information is contained in keywords, which are index terms. The task of identifying a limited selection a list of words, phrases, or keywords that can be extracted from a document can be used to convey the meaning of the document is known as automatic keyword extraction. Text interpretation methods like TF-IDF, RAKE, YAKE, Key BERT can help you get the information you need from a single document or a stack of papers. In topical years, a specialized field of artificial neural networks research in deep learning, has outperformed contemporary statistical and NLP techniques in a variety of situations, allowing these methods to be applied to challenges including machine translation, keyword extraction, and summarization. Deep learning algorithms for keyword and key phrase extraction were investigated in this work

Keywords:
Key phrases, Key words, Deep learning, RNN.

1. Introduction

With the development of the Internet, computers and computers systems are freed from the limitation of working locally, defense systems, electronic devices, land, air and sea in a wide range of vehicles, such as smart home systems, has found use. However, from many sources data compiled mostly in text format processing and interpretation problems arose it.

The problem is more than predefined statistical methods. made it important. Machine translation, keyword and key phrase extraction, linking documents, title problems such as text tracking, text summarization, text mining solved in the field.Many studies on text interpretation has. For example, Social networks are rich in text.Particular,Social networks, keyword search, classification and text analysis for a wide variety of applications such as clustering requiresWide variety of search and classification While there are well-known applications for scenarios, social networks richer in both text and links has structure. Most of the work in the field is either purely text Uses content or link structure only [1].

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An Efficient Next Word Prediction for Accurate Information using Deep Learning Algorithms

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Abstract:

Natural language processing and language models define subsequent phrase predictions. To bet, the following matching sentences are used in search engines, sentence or text content processing, and documentation applications. The most likely phrase is a high-value match for that sentence. In this task, subsequent phrase predictions are performed using the deep learning version. First, we preprocessed the text content, normalized the text content, and implemented four specific deep learning classifiers to experiment and check statistics for expecting subsequent words. Canonical Neural Network (CNN), Recurrent Neural Networks (RNN), Long Short-Term Memory (LSTM), and Bidirectional Long Short-Term Memory (BiLSTM). Of these deep algorithms, CNN when implemented contributed a high loss and much lower accuracy, and Bidirectional LSTMs resulted and were noted with high accuracy and low loss. These classifiers are run sequentially and comparisons are primarily based on loss discounts and accuracy characteristics. The results obtained show that the CNN's loss discount and accuracy were the worst and BiLSTM achieved the highest quality.

Keywords:
Natural Language Processing, Deep Learning, Prediction, CNN, LSTM, BiLSTM

1. Introduction

Text mining has gained quite a significant importance during the past few years. Data in recent times are available to users through many sources like electronic media, digital media, and many more. This data is usually available in the most unstructured form and there exist a lot of ways in which this data may be converted into a structured form. In many real-life scenarios, it is highly desirable to classify the information in an appropriate set of categories. News contents are one of the most important factors that influence various sections.

The objective of this paper is to efficiently classify web news into the specified four categories like health, business, entertainment, and science & technology. In order to achieve this initially the Natural Language Processing techniques are applied to get the interesting pattern and efficient Machine Learning classification algorithms are applied like SVM, LSTM, Decision Tree, and KNN thus high accuracy is expected to be obtained.

The contributions of the proposed framework are threefold:

1) The proposed framework can retrieve latent semantic information about social entities from the big data of media texts.

2) The proposed framework makes it possible to assess the soft power of social entities based on analyzing and projecting the media image of these social entities, which is constructed out of related media texts, to the soft power space.

3) The proposed framework integrates the top-down, deductive, human-intelligence based, and useful.

In this paper, we have considered the problem of the classification of news articles. This paper presents algorithms for category identification of news and has analyzed the shortcomings of a number of algorithmic approaches.

2. Review of Literature

Language modeling represents the first boundary in neural network research. A significant benchmark for Neurolinguistic modeling is Bengio et al. [1], who implemented the n-gram language model as a feed-forward neural network with historical words as input and predicted words as output. Schwenk et al. [2] take these language models into machine translation (also known as "continuous spatial language models") and use them in reclassification, similar to previous work on speech and voice recognition. Schwenk [3] suggested a number of changes and implementation is carried out using an open-

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An Optimized Framework of Video Compression Using Deep Convolutional Neural Networks (DCNN)

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Abstract: Video streaming demand has risen significantly in the modern world and now accounts for a significant portion of internet traffic, making it a difficult job for service providers to stream videos at high speeds while using fewer storage spaces. The existing video compression prototypes necessitate non learning based designs in order to follow inefficient analytical coding design. As a result, we propose a DCNN technique for obtaining optimal set of frames by relating each frame pixel with preceding and subsequent frames, then identifying related blocks and reducing unnecessary pixels by incorporates OFE-Net, MVE-Net, MVD-Net, MC-Net, RE-Net, and RD-Net. The proposed DCNN technique generates high video quality at low bit rates with respect to MSSIM and PSNR.

Keywords:
Deep neural networks, ***E***ncoding, Decoding, Video Compression.

1. Introduction

People who watch videos on the internet are about 90%, this is expected to rise in the near future. As a result, an effective video compression model is required to deliver higher-quality frames while using less bandwidth.

Video codecs rely on hand-drawn models to compress videos. The existing models are not optimized, despite their excellent design. By optimizing the overall codec model, the video compression process can be improved even more.

Video compression using Deep Neural Networks has outperformed traditional image codecs such as the Joint Photographic Experts Group. End-to-end training is required for deep neural network-based models, which rely on extremely nonlinear transformation.

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Building a model employing various video compression algorithms is not a simple undertaking. The most significant aspect is motion estimation, which generates and compresses motion data. The process of video compression relies heavily on motion information to eliminate temporal redundancy. To express motion vectors, the only approach is to utilize an optical flow net. Although learning-based optical flow estimation focuses on generating precise flow information, correct optical flow isn't always the best option for specific video jobs. Furthermore, the ability of optical flow data is higher than existing models directly compressing optical flow value using existing methods will result in high bit rate information.

The goal of reducing rate distortion is to provide more quality reconstructed frames at a given bit rate. It is required for video compression to work properly.

In order to achieve benefits of end-to-end training for deep learning-based video compression models, rate-distortion must be reduced. The following are the primary advantages of this model: Deep neural networks are used to implement all of the phases in the DCNN model. All of the steps in the DCNN model are reliant on rate distortion and are integrated using a single loss function, resulting in a high compression ratio. Research persons working on computer vision, video compression, and deep model construction will benefit from this study.

2. Related Work

In [1], the video compression task can be categorized in to three types. They are - the Classical Era,the era of Generic Heuristics and the era of modern techniques with Deep Learning. By the detailed

An Efficient Machine Learning Model for Clinical Support to Predict Heart Disease

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Summary
Early detection can help prevent heart disease, which is one of the most common reasons for death. This paper provides a clinical support model for predicting cardiac disease. The model is built using two publicly available data sets. The admissibility and application of the the model are justified by a sequence of tests. Implementation of the model and testing are also discussed

Keywords:
Efficient Machine Learning Model, Predict Heart Disease, Early Detection

Acronyms:
DBSCAN- Density Based Spatial Clustering of Applications with Noise
SMOTE-ENN-Synthetic minority oversampling technique- Edited nearest neighbor
kNN- kth Nearest Neighbor
XGBoost- Extreme Gradient Boost
ANN- Artificial Neural Network
SVM- Support Vector Machine
DT – Decision Tree
NB- Naïve Bayesian
MLA- Machine Learning Algorithm

1. Introduction

Heart disease is one of the major problems the world is facing right now. Out of all deaths, it accounts for about 30 percent of the share. The overall number of deaths is predicted to rise by 22 million if the problem is not handled. Heart disease is a special case where a plaque on arterial walls obstructs the smooth flowing of blood and causes heart stroke. The factors that contribute to this heart disease include excess consumption of alcohol and tobacco. The advanced identification of heart disease in potential individuals and better diagnosis by using a prediction model can be useful in reducing the death rates. The clinical support system will include a prediction model that clinicians may use to assess risk and determine the best course of action. With the increasing severity of heart diseases, they should be identified at an early stage to prevent deaths. Here the model makes use of some machine learning con- cepts to build an accurate model which predicts the occurrence of heart disease and recommends proper treatment to the subject/patient. The overall aim of the model is to accurately predict with a few tests and attributes. We can consider many more attributes for prediction but our goal is to predict the presence of heart disease with a lower number of variables and faster efficiency.

The objectives of this article are:

- To study the existing systems, identify their drawbacks, propose a new model to overcome the problems and evaluate the measures on the subjects.
- To compare the measures with other machine learning models and identify the best one

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A Review on Text Mining Techniques for the Prediction of Psychological Behaviour using Social Media

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Abstract: Text mining (TM)or text data mining mainly focuses on analyzing different types of data that is available in various social networking sites and also from other types. Social media reduced the gaps between individuals. Prior to its advent, it was not only difficult to communicate but also was time taking process. Social media service is the fast and inexpensive means to communicate with the people. Using text mining algorithms many applications such as emotion recognition, sentiment analysis, users behavior analysis, stress based analysis and psychological analysis can be developed. To improve the analysis of data several machine learning (ML) algorithms can be adopted to overcome the issues in text mining process. This paper discusses and analyzes various text mining algorithms, text analysis and their performances.

Keywords: text mining, machine learning, sentiment analysis.

Introduction

Text mining is most widely used to analyze different formats of data based on the available domains. Nowadays various social media sites are available in the web; among this the most popular sites are Facebook and Twitter. For better analysis these social media sites can be used. [1], [2]. Without making any further efforts these networking sites are used to gather friends, communicate with friends and family [3] [4]. People with different ideas on various platforms, political issues, social issues, discussions, trending news and all the other types of issues can express themselves on one platform with social networking sites [5]. It is very easy for the humans to communicate and exchange important information with other persons[6] [7].

Nowadays, technology is growing rapidly in present world. The distance between users and data sharing is very easy [8]. By using posts, timeline messages, tweets and instagram messages, users can easily share their views and ideas [9] [10] through SNS, blogs and etc. [11]. The author [12] talks about various social media platforms that consider the Google Apps to show the people that learn, cooperate, and share the ideas. Social media is integrated with various learning platforms such as E-Learning and M-Learning [13] [14]. Over social media, people never like to use accurate sentencestructures, grammar and spellings [6]. People use different irrelevant patterns to send messages. Because of the unstructured language, the time taken is very less and it is a complex task to retrieve the accurate patterns from the data. By using text only, all the social media platforms work perfectly to communicate with each other. This is applicable for all the SNS. Some people share their knowledge and data by using blogs, timeline messages, tweets and chats in their own languages. The text mining methods are mainly used to process the text and make it very easy in the most appropriate manner [15].
Emotions can be conveyed in the form of text. This type of text data represents the emotions and behavior of the human. Emotion recognition in the form of text is very difficult task as the approach is expected to be easier and is supposed to analyze every text. Several internet based applications merge with social media group can increase the performance[15].
Applications such as Facebook, Twitter, Instagram, Myspace and LinkedIn are at increasing rate of access day-by-day, huge data is exchanged by using these social networking sites in countries like India, America, Canada, UK etc. These data is collected and used for analysis of present situation within their countries and also states. The analysis of text is improved by employing machine learning algorithms and result in better performance. This paper mainly focuses on processing of several texts available in different social media platforms.

Literature Survey

The Liu [17] explained about various types of research areas in the domain of sentiment analysis, such as SA and OM. Huge research has been carried out on this to address the different issues. Pang et al. [18] developed a new model which enables the data retrieving systems that is used to enable the opinion based data. This is used

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A Survey on the Performance Comparison of Map Reduce Technologies and the Architectural Improvement of Spark

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Abstract

Hadoop and Apache Spark are Apache Software Foundation open source projects, and both of them are premier large data analytic tools. Hadoop has led the big data industry for five years. The processing velocity of the Spark can be significantly different, up to 100 times quicker. However, the amount of data handled varies: Hadoop Map Reduce can process data sets that are far bigger than Spark. This article compares the performance of both spark and map and discusses the advantages and disadvantages of both above-noted technologies.

Keywords-: *Hadoop, spark, Map reduce***,**

1. Introduction

The large-scale information scanning has become a remarkable platform for organizations to take advantage and exploit heaps of vital information. In the course of this vast information rise, Hadoop has progressed fiercely as an on-or cloud-based stage as the single-size solution for the huge scale problems of the corporate sector. [1] While Utilizing Hadoop has met a substantial part of the advertising, the best arrangement may be in some conditions while performing tasks on a traditional data collection. Hadoop is not an information base, but a general programming system was deliberately used to handle enormous quantities of structured and moderately information.

[1] For large-scale information evaluation, associations contemplating using Hadoop should examine if their present or future information demands require the type of capabilities that Hadoop offers. Organized information is described as information that resides in the fixed bounds of a record or document.

Due to the way structured information may be recorded, disclosed, questioned and explored, even in large quantities, in an essential and immediate method, a conventional set of data is usually implemented. [2] Unstructured data is referred to as information from a variety of sources, including communications, text archives, recordings, pictures, sound records, internet media postings.

A usual dataset cannot handle or examine unstructured information as both puzzling and voluminous. Hadoop's ability to add, Totals, and explore huge multi-source information stores without initially structuring allows associations to gain additional knowledge quickly. In this sense, Hadoop is perfect for storing, monitoring and evaluating large quantities of unstructured information for companies [3]

2. Map Reduce

MapReduce is a programming paradigm that provides enormous scalability over a Hadoop cluster's hundreds or thousands of computers. MapReduce, as the processing component, lies at the heart of Apache Hadoop. The phrase "MapReduce" refers to two independent activities performed by Hadoop applications.[2] The first type of task is the map job, which takes a collection of data and turns it into another set of data, where individual components are split down into tuples (key/value pairs).The reduction task takes as input the result of a map and merges those data tuples into a smaller collection of tuples. The reduction task is always run after the map job, as the term Map Reduce indicates.[2]

2.1 Mapper

The task of the mapper is to process the supplied data. In most cases, input data comes in the form of a file or directory, which is then stored in the Hadoop file system (HDFS). Line by line, the

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A HYBRID APPROACH FOR OPTIMIZED VIDEO COMPRESSION USING DEEP RECURRENT AUTO ENCODERS (DRAE) TECHNIQUE

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ABSTRACT

Presently, the data traffic is increasing for video conferencing, online education, gaming and watching videos on Netflix, Amazon Prime, YouTube and other OTT platforms. And, the service users are always demanding high definition and high-quality video facilities day by day. However, in order to transmit video data across the Internet's constrained bandwidth effectively, video compression is a necessary task. In last few decades, various video compression algorithms, such as non-learning and learning were standardized. But still some improvements are needed for effective video related services. We propose a deep learning based Deep Recurrent Auto Encoders (DRAE) approach which contain various modules for implementing an efficient video compression technique. The experimental outcome shows our model achieves state-of-the-art learned video compression performance in terms of both PSNR and MS-SSIM.
Keywords: *Video, Compression, Deep Neural Networks, Recurrent Auto Encoders.*

1. INTRODUCTION

Nowadays, video content contributes to more than 80% internet traffic, and the percentage is expected to increase even further. Therefore, it is critical to build an efficient video compression system and generate higher quality frames at given bandwidth budget.

Modern digital video looks as impressive as it does is because of the sheer amount of information digital cameras can capture. This informational data is what creates the crisp details and vivid saturation of modern video. The problem is that it takes a ton of data to capture these beautiful videos. So much data that you may find your computers and hard drives filling up quickly due to the hefty storage demands of your video, not to mention the extremely long wait times for uploading or sharing these videos to online platforms. Luckily, compression offers the solution of taking the vast amounts of data that cameras generate and interpreting it in a way that is more efficient, creating new files that are only a fraction of the file size! The only way you'll be able to share, upload, stream and store all of your great video content with any regularity is by compressing it. The trick is to know "good" compression from "bad" compression. The objective of "good" compression is to minimize the file size as much as possible with the least amount of image quality reduction by removing things like redundant or non-functional data from your video file.

Internet traffic has recently been dominated by video-related applications including video on demand (VOD), live streaming, and ultra-low latency real-time communications.

Due to the ever-increasing demands for resolution ([1] and [2]), and fidelity, more effective video compression is required for content transmission and storage, and therefore for successful implementation of networked video services ([3], [4]). Video compression systems develop suitable techniques to reduce

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AN INCREMENTAL LEARNING METHOD FOR CLASSIFICATION OF PLANT LEAVES USING DEEP LEARNING

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Abstract

Research on plant leaves is an impact on Agriculture. Plant leaves have an essential role in environmental protection. Recognition of plant leaves is essential to agricultural environments. A leaf dataset has a collection of shape and vein, colour, and texture features extracted from digital leaf images. In this paper, we have used Flavia dataset and we have proposed a Boost incremental learning method to train the model on small leaf sub-datasets when extracted features are huge to place into memory. Due to this boost incremental approach, we have obtained 98% accuracy in classification of plant leaves. This work addresses and provides better solutions for classification of plant leaves using Convolutional Neural Network.

I. Introduction

The leaf is an important part of a plant. Leaves are in various shapes and sizes. A leaf has only one blade. This type of leaf is called a simple leaf. An oak leaf is example of simple leaf. A leaf has two or more blades. This type of leaf is called compound leaf. An ash leaf is example of compound leaf. Leaf

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Keywords: Leaf, Machine Learning, Deep Learning, CNN, Boost incremental learning.
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Brain Tumor Classification Based on Enhanced CNN Model

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Keywords:
brain tumor classification, brain tumor benchmark, U-Net, RefineNet, SegNet

ABSTRACT

Brain tumor classification is important process for doctors to plan the treatment for patients based on the stages. Various CNN based architecture is applied for the brain tumor classification to improve the classification performance. Existing methods in brain tumor segmentation have the limitations of overfitting and lower efficiency in handling large dataset. In this research, for brain tumor segmentation purpose the enhanced CNN architecture based on U-Net, for pattern analysis purpose RefineNet and for classifying brain tumor purpose SegNet architecture is proposed. The brain tumor benchmark dataset was used to analysis the efficiency of the enhanced CNN model. The U-Net provides good segmentation based on the local and context information of MRI image. The SegNet selects the important features for classification and also reduces the trainable parameters. When compared with the existing methods of brain tumor classification, the enhanced CNN method has the higher performance. The enhanced CNN model has the accuracy of 96.85% and existing CNN with transfer learning has 94.82% accuracy.

1. INTRODUCTION

Brain cancer classification is a significant task to select the treatment for the patients that requires the physician's knowledge and experience. Automatic classification of brain cancer classification system act as a decision model for radiologists to identify the tumors. The current system accuracy is need to be improved for suitable treatments [1]. Brain tumor classification system will assist the doctor to evaluate prognosis, aggressiveness and growth of brain tumor. The types of brain tumor are need to be classified to assist the doctor. Different types of brain tumors are Glioma, benign, and malignant [2]. Recently, machine learning techniques achieves the significant performance on the image analysis and provides nearly same accuracy as trained specialists for the detection of the brain tumor. Deep learning techniques provides the significant improvement in the brain tumor detection and other medical image analysis [3]. Tumor diagnosis and treatment requires various features like size and position of the tumor in the brain Magnetic Resonance Imaging (MRI) [4]. Generally, MRI screening techniques are highly preferred by doctors for the estimate the structure of tumor for pre and post treatment [5].

Various imaging methods can be applied to identify and categorize the tumor and MRI is a commonly used non-invasive method. MRI screening method doesn't use ionizing radiation during the scan, provides high resolution soft-tissue and apply imaging parameters to acquire different images [6, 7]. Convolutional Neural Network (CNN) based methods have been successfully applied and achieved the successful performance in the brain tumor classification. Advantages of CNN based methods are manually segmented portion of tumor are not needed for classification and provide fully automated classification [8]. Most common problem in existing CNN based brain tumor classification is having lower performance in the publicly available dataset [9, 10]. In this research, the enhanced CNN model is introduced to increases the efficiency of brain tumor detection. The enhanced CNN model is based on three techniques such as U-Net, RefineNet and SegNet. The U-Net method is used for the segmentation of brain tumor, RefineNet method is used for the pattern analysis and SegNet is used for the classification. The analysis shows that the enhanced CNN model has higher performance compared to existing method.

2. LITERATURE SURVEY

Brain tumors are among the deadliest types of cancer, with a poor survival rate. Early diagnosis and categorization of brain tumors aids in the efficient treatment of the malignancy. Brain tumor classification recent researches were reviewed in this section.

Sajjad et al. [11] developed an extensive data augmentation approach and a CNN-based model for brain tumor classification. The tumor region is segmented from the picture using CNN, and the data augmentation approach is used to train the CNN model. The augmented data is used to fine-tune the pre-trained CNN model for classification of brain tumor. The proposed CNN model is tested on the brain tumor dataset and shows the higher performance in the classification. The overfitting problem of the CNN model is need to be reduce to increases the efficiency of the brain tumor classification.

Anaraki et al. [12] presented a CNN model with a Genetic

Multi-Class Classification Framework for Brain Tumor MR Image Classification by Using Deep CNN with Grid-Search Hyper Parameter Optimization Algorithm

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Summary
Histopathological analysis of biopsy specimens is still used for diagnosis and classifying the brain tumors today. The available procedures are intrusive, time consuming, and inclined to human error. To overcome these disadvantages, need of implementing a fully automated deep learning-based model to classify brain tumor into multiple classes. The proposed CNN model with an accuracy of 92.98 % for categorizing tumors into five classes such as normal tumor, glioma tumor, meningioma tumor, pituitary tumor, and metastatic tumor. Using the grid search optimization approach, all of the critical hyper parameters of suggested CNN framework were instantly assigned. Alex Net, Inception v3, Res Net -50, VGG -16, and Google - Net are all examples of cutting-edge CNN models that are compared to the suggested CNN model. Using huge, publicly available clinical datasets, satisfactory classification results were produced. Physicians and radiologists can use the suggested CNN model to confirm their first screening for brain tumor Multi-classification.

Key words:
Multi-classification, CNN model, Grid search technic, Hyper parameter optimization

1. Introduction

Brain tumors are lumps that arise as a result of aberrant brain cell proliferation and disrupt the brain's regulating mechanisms. The formation of tumor in the skull has the potential to grow, putting pressure on the brain and having a negative impact on overall healthiness. Initial detection and prevention of brain tumor is a crucial study topic in medical imaging since it assists in the selection of the best appropriate treatment option to save patients' lives. There are various classifications for brain tumors. The categorization of brain tumors into malignant and benign tumors is a standard procedure. Lumps that grow in the skull but not in the brain matter are known as brain benign tumors. Meningioma's constitute a sizable subset of this set. Unlike benign in the other body part, in the brain can occasionally induce severe complications. Some benign tumors, such as meningioma, can sometimes progress to malignant tumors. They are highly likely to be surgically removed because they rarely spread to neighboring brain tissue. Pituitary tumor is cancer it starts in the pituitary secretory organ, which govern physiological processes and control hormones. Pituitary tumors are benign, meaning they do not spread to other regions of the body. Pituitary tumors are usually benign; however, they do occasionally develop to malignant tumors. Problems of pituitary tumors might result in persistent hormone shortage as well as eyesight loss. Tumor cells which are malignant are irregular cells that replicate uncontrollably and irregularly. This type of tumors can compress, infest, and kill ordinary tissues. Metastatics are ones that have spread from another section of the body to the brain. They are most frequently found in the large intestine, lung, stomach, breast, prostate and skin. The general class of malignant tumor is a glioma. They are the origin of the vast majority of brain cancers and contain uncontrollable proliferating cells. They raise fast and may stretch into healthy nerves around them, despite the fact that they rarely stretched to spinal cord or further part of the body. Gliomas are classified further based on their grade. The World Health Organization (WHO) [3] categorizes gliomas into 4 grades (I to IV), is the most widely accepted glioma tumor classification today [15].

Brain tumor identification and true categorization are critical in case of diagnosing cancer, treatment scheduling, and treatment outcome assessment. Despite recent advances in medical technology, brain tumor classification still relies on biopsy samples' histopathology diagnosis. Clinical diagnosis and assessment of imaging techniques like MRI, CT, and pathological exams, are commonly used to get a definitive diagnosis. The primary disadvantages of this diagnostic procedure include the fact that it is intrusive, time-consuming, and prone to sample mistakes. It is potential to increase physicians' and radiologists' investigative capabilities and reduce the time necessary for a right diagnosis with the use of computer-aided completely automated identification and diagnosis devices that seek to produce fast and exact judgements by specialists.

The purpose of this research is developing a framework with CNN model for classifying brain tumors using freely accessible datasets. The grid search optimizer automatically tunes almost all CNN hyper parameters.

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Big Data Image and Video Analysis Using Deep Learning

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Abstract
Thousands of closed-circuit television cameras are linked to the internet, according to IDC (International Data Corporation), supplying 65 percent of all streaming data, which is greater than data from transactions, medical records, entertainment, and social media combined. Streaming data is information generated in real time by thousands of data sources, which typically deliver data in small batches. This video and image stream contains useful information about traffic, weather, and the environment, among other things. Machine Learning takes data and turns it into a programme that can complete a task. Deep learning has demonstrated to be far more promising than the current system. Deep learning's Deep Convolution Neural Network (DCNN) is suitable for a wide range of image and video processing workloads.

Keywords:
Machine Learning, DCNN, Streaming, Deep Learning.

1. Introduction

The main source of big data is now video data. Because of the complexities, pace, and volume of video data, public security and other surveillance applications demand rapid, intelligent video processing in real time. [1]
In the field of video surveillance and intelligent camera systems, abnormal event detection is critical. The majority of existing approaches are not object-aware in the literature, meaning that they do not distinguish between distinct objects during processing. [2]
Hundreds of thousands of cameras are connected to the Internet, allowing data to be transmitted in real time (videos or periodic images). The photos contain information that can be used to figure out what's going on in the scene, such as traffic, weather, and the environment. Many challenges face analyzing data from these cameras, including (i) obtaining data from geographically dispersed and diverse cameras, (ii) creating a software environment that allows users to analyze massive amounts of data from the cameras at the same time, and (iii) allocating and managing processing and storage resources. Despite the fact that CCTV is the most commonly utilized method for traffic monitoring, issues develops, necessitating manual traffic flow checks. [4]. For a traceability system using deep learning, A video-based approach for detecting objections is proposed. The surveillance footage is first gathered, the convolutional neural network model is trained off-line after an annotated photo database of the target item, such as people or vehicles, is constructed. The trained model is used to build and implement a system for real-time target detection and recognition. For the traceability application, a deep learning-based detection technique is effective. [5]

With millions of public network cameras throughout the world catching numerous occurrences, The vast volume of a system to retrieve, save, and analyse visual data from cameras is required. The information gleaned from the data will eventually help us comprehend the planet better. In order to meet the needs of the analysis, such a system would need to allocate and manage a large number of resources. [6]
Because video surveillance data is rapidly growing, efficiently storing and querying large surveillance films, as well as querying performance and storage fault tolerance, is a challenge. Thanks to modern cloud computing and big data approaches, intelligent

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A Hybrıd Group Acceptance Samplıng Plans For Lıfe Tests Based On Half Logıstıc Dıstrıbutıon

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Abstract

In this article, when the lifetime of an item follows a half logistic distribution, a hybrid group acceptance sampling method based on shortened lifetimes is developed. The minimum number of testers and acceptance number required for a particular group size are determined for a specified consumer risk and test termination time. The minimum ratios of the true average life to the stipulated life at a certain producer's risk are determined using the values of the operational characteristic function for various quality levels. Examples are used to demonstrate the findings.

Keywords: *hybrid group acceptance sampling plan, consumer's risk, operating characteristic function, producer's risk, truncated life test, half logistic distribution*

Introduction

Acceptance or rejection of a product is based on its suitability for use. There are various sorts of quality checking processes used in quality control. Acceptance sampling plans are one example of such a procedure. An acceptance sampling strategy is a method for determining the minimal sample size for testing. This is especially essential if a product's quality is determined by how long it lasts. When constructing a sampling plan, it is frequently believed that only one item will be placed in a tester. In practise, however, testers who can handle a large number of items at once are used since testing time and money can be saved by evaluating objects at the same time. A group of objects in a tester can be considered, and the number of items in a group is referred to as the group size. A group acceptance sampling strategy is an acceptance sampling plan based on such groups of items (GASP). The hybrid group acceptance sampling plan is a way of calculating the minimal number of items for a predetermined number of groups (HGASP). When the HGASP is used in conjunction with shortened life tests, it is referred to as an HGASP based on truncated life tests.

Acceptance sampling plans, group acceptance sampling plans, and hybrid group acceptance sampling plans (HGASP) of abbreviated life assessments have all been studied and can be

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Article

Rider and Sunflower optimization-driven neural network for image classification

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Abstract

Image classification is the classical issue in computer vision, machine learning, and image processing. The image classification is measured by differentiating the image into the prescribed category based on the content of the vision. In this paper, a novel classifier named RideSFO-NN is developed for image classification. The proposed method performs the image classification by undergoing two steps,

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An Enhanced Weight Update Method for Simplified ARTMAP to Classify Groundwater Data

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adaptive resonance theory, artificial neural network, fuzzy water quality index, simplified fuzzy ARTMAP, weighted arithmetic water quality index

ABSTRACT

The groundwater for aquatic purposes must be assessed prior to its consumption. Huge number of conventional methods are existing for assessing the quality of groundwater. The water quality index is one of the important conventional methods to assess the groundwater quality. But the conventional methods alone are not enough to assess groundwater quality as well as classify based on its purity. In this paper, we propose an enhanced weight update method for Simplified Fuzzy Adaptive Resonance Theory model to classify the groundwater quality depending on the relative weights of the groundwater quality parameters. Finding the optimal weights is the key to achieve better accuracy of the model, most of the nonlinear models fails to exhibit good accuracy if they fail to learn the optimal weights in the learning process. The aim of the work is to find the good fit between the predicted and the actual groundwater quality grades by identifying the optimal weights of the network by the enhanced weight update method. The Simplified Fuzzy Adaptive Resonance Theory map with the enhanced weight update method performance is justified by comparing it with the Simplified Fuzzy Adaptive Resonance Theory Map. The enhanced weight update method improves the accuracy of the Simplified Fuzzy Adaptive Resonance Theory Map in classifying and predicting the groundwater quality.

1. INTRODUCTION

We all know that groundwater is one of the natural major water sources across the world. Primarily, it is used for drinking and living purposes. Besides this, it is also used for agricultural, industrial and domestic purposes. But urbanization and industrialization, for getting the crops in short periods the farmers using pesticides and chemical fertilizers for protecting the crops from insects. The quality of groundwater is deteriorated due to the waste produced by the industries which is also one of the factors. We cannot absolutely stop these practices which will deteriorate the groundwater quality. Instead, we should take proper care regarding the groundwater. We can assess the quality of the groundwater before consumed, because groundwater is deteriorated by various factors as above stated and mostly by anthropogenic activities. Water Quality Index is one powerful and frequently used mathematical method to assess the groundwater quality. WQI is actually developed by Horton (1965) [1] in USA. Since 1965 it is one of the most effective tools used in various groundwater studies by researchers and groundwater management stations. Recently, Udeshani et al. [2], applied wqi to assess the groundwater quality of a hard rock terrain in Sri Lanka.

Rest of this research work is arranged as follows: In Section 2 the literature is presented. The methodology we followed to develop the models is presented in Section 3. Empirical study of the considered 2 models is presented in Section 4. Finally, Section 5 provides conclusion of this work.

2. LITERATURE SURVEY

In this section, an attempt has been made to study the assessment methods used to determine status of the groundwater excellence and the classification of the groundwater depending on its purity. According to the chronological order, Horton (1965) is the first person who formulated water quality index method to assess the quality of water in United States. Brown et al. [3] improved the Horton's water quality index by adding 2 more water quality parameters. Since 1970 more than 30 groundwater quality indices are formulated across the globe to assess the groundwater quality basing on physical, chemical parameters. Lumb et al. [4] presented a comprehensive review of various water quality indices since 1960 to 2011. Vidyalakshmi et al. [5] reviewed more than 30 water quality indices those are exits since 1970 to 2011. Tyagi et al. [6] reviewed and presented the pros and cons of 4 popular water quality assessment methods. Anwar and Aggarwal [7] utilized wqi to assess the groundwater status of Aligarh City, India. By collecting groundwater data in pre and post monsoon seasons from 40 sampling points during 2012. This study reports that half of area under study is moderately polluted. Gholami et al. [8] applied wqi, GIS and

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Extraction of human understandable insight from machine learning model for diabetes prediction

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ABSTRACT

Explaining the reason for model's output as diabetes positive or negative is crucial for diabetes diagnosis. Because, reasoning the predictive outcome of model helps to understand why the model predicted an instance into diabetes positive or negative class. In recent years, highest predictive accuracy and promising result is achieved with simple linear model to complex deep neural network. However, the use of complex model such as ensemble and deep learning have trade-off between accuracy and interpretability. In response to the problem of interpretability, different approaches have been proposed to explain the predictive outcome of complex model. However, the relationship between the proposed approaches and the preferred approach for diabetes prediction is not clear. To address this problem, the authors aimed to implement and compare existing model interpretation approaches, local interpretable model agnostic explanation (LIME), shapely additive explanation (SHAP) and permutation feature importance by employing extreme boosting (XGBoost). Experiment is conducted on diabetes dataset with the aim of investigating the most influencing feature on model output. Overall, experimental result evidently appears to reveal that blood glucose has the highest impact on model prediction outcome.

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1. INTRODUCTION

In prediction of diabetes with ensemble learning model, the claim that highest possible accuracy is achieved by employing complex ensemble learning does not make sense to domain expert or nephrologist [1]. This is because the predictive outcome of ensemble model or the claim that a patient is suffering from diabetes based on the predictive outcome of model do not have sense to domain expert in terms of predictive accuracy. Hence, there is a need for building model that is reliable and interpretable. In response to model interpretability problem different approaches such as local interpretable model explanation (LIME), Shapely additive explanation (SHAP) and permutation based global model interpretation approaches such as random forest and extreme boosting feature importance are widely employed to interpret the predicted outcome of ensemble model in medical domain [2]. As the amount of data produced by healthcare centers is growing rapidly, the use of predictive analytics and predictive model for patient diagnosis requires the use of complex models to

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Textual Dissection of Live Twitter Reviews on Corona Vaccines using Various Machine Learning Algorithms

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Rohini Kancharapu ; A Sri Nagesh **All Authors** •••

R.V.R.& J.C COLLEGE OF ENGINEERING(AUTONOMOUS)

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RESEARCH PAPERS PUBLISHED BY FACULTY MEMBERS IN JOURNALS/BOOK CHAPTERS: 26

S.NO	Journals -Conferences	Total
1	International Journals	23
2	International Conferences	6

Indexing	SCI	WOS	Scopus
		3	20

SNO	Title Of The Paper	Indexing
1.	Kalpana Devi Bai. Mudavathu, **Dr. M.V.P Chandra SekharaRao**, "Wasserstein GANs for Generation of Variated Image Dataset Synthesis" Annals of R.S.C.B Vol. 25(3), 8753 – 8762, 2021.. ISSN:1583-625	Scopus
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PAPER PRESENTATIONS BY FACULTY MEMBERS AT INTERNATIONAL CONFERENCES: 06

S.No	Author	Title of the paper	Conference Details
1.	Dr. Ch.Aparna	Data Mining Technique For Structural Strength Monitoring System Methodologies	International Conference on Computer Communication and Informatics (ICCCI-2021), Coimbatore,India,Jan.27-29,2021. (DOI:10.1109/ ICCCI50826. 2021.9402640). https://www.researchgate.net/publication/351645494_DATA_MINING_TECHNIQUE_FOR_STRUCTURAL_STRENGTH_MONITERING_SYSTEM_METHODOLOGIES
2	Dr. Ch.Aparna	Human emotion detection using convolutional neural network with hyperparameter tuning	Third International Conference on Recent Trends in Advanced Computing
3	Dr. R.LakshmiTulasi	An attention based automatic image description generation	Fourth International Conference on Advance Informatics for Computing Research (ICAICR)
4.	Sri M. Srikanth	A Hybrid Framework for Prediction of Heart Disease using Rough Set and Fuzzy Set Approach	International Conference on Computational and Bio Engineering jointly Organized by Departments of Computer Science, Bio Sciences & Sericulture, 4th & 5th December 2020.
5	**Lakshmi Tulasi.R**	Performance Analysis of Classification Methods for Cardio Vascular Disease (CVD)	Advances in Communication and Computational Technology, Lecture Notes in Electrical Engineering, Vol.668, 1231-1238, Jan 2021. DOI:10.1007/978-981-15-5341-7_93.Springer
6	**Ch.Aparna**	Structural strength monitoring system practices using machine learning	" Proceedings of Integrated Intelligence enable networks and computing,Springer,498.DOI: 10.1007/978-981-33-6307-6_26.