RAMCO INSTITUTE OF TECHNOLOGY

(APPROVED BY AICTE, NEW DELHI AND AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
(ACCREDITED BY NAAC, ISO 9001:2015 CERTIFIED INSTITUTION)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

JOURNAL ARTICLES

130

CONFERENCE PROCEEDINGS

47

BOOKS / CHAPTERS

7

PATENTS

4

CITATIONS

1308

CITATIONS

1387

h -iNDEX

20

ACADEMIC YEAR 2024 - 2025

RAMCO INSTITUTE OF TECHNOLOGY

(APPROVED BY AICTE, NEW DELHI AND AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
(ACCREDITED BY NAAC, ISO 9001:2015 CERTIFIED INSTITUTION)

RESEARCH BULLETIN
2024- 2025
(MARCH 2023 - DEC 2024)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

SCAN HERE
TO KNOW MORE

TNEA
Counselling Code
4678

MANTRA

FOR THE STUDENTS, BY THE STUDENTS, BY THE FACULTY

Vision

To impart international quality education, promote collaborative research and graduate industry-ready engineers in the domain of Artificial Intelligence and Data Science to serve the society.

Mission

- Excel in Teaching-Learning process and collaborative Research by the use of modern infrastructure and innovative components.
- Establish an Artificial Intelligence and Data Science based centre of excellence to prepare professional technocrats for solving interdisciplinary industry problems in various applications
- Motivate students to emerge as entrepreneurs with leadership qualities in a societal centric programme to fulfil Industry and community needs with ethical standards.

Program Educational Objectives (PEOs)

After successful completion of the degree, the students will be able to

- **PEO 1.** Apply Artificial Intelligence and Data Science techniques with industrial standards and pioneering research to solve social and environment-related problems for making a sustainable ecosystem.
- **PEO 2.** Excel with professional skills, fundamental knowledge, and advanced futuristic technologies to become Data Scientists, Data Analyst Managers, Data Science leaders AI Research Scientists, or Entrepreneurs.

Program Specific Outcomes (PSOs)

After successful completion of the degree, the students will be able to:

- **PSO 1:**To apply analytic technologies to achieve at meaningful insight and observation from data to solve engineering problems
- **PSO 2:** To create and apply Artificial Intelligence and Data Science techniques to forecast future trends in the domain of Healthcare, Education, Agriculture, Manufacturing, Automation, Robotics, and Transport, etc
- **PSO 3**: To enrich the critical thinking skills in emerging technologies such as Hybrid Mobile application development, cloud technology stack, and cyber-physical systems with mathematical aid to foresee the research findings and provide the solutions

Advisory Board

1. **Dr. Prabhat Kumar**
   Professor & Head, Department of Computer Science
   NIT, Patna.
2. **Dr. Manju Khari**
   Associate Professor, School of Computer and System Sciences,
   Jawaharlal Nehru University, New Delhi
3. **Dr. Janmenjoy Nayak**
   Associate Professor,
   Maharaja Sriram Chandra BhanjaDeo(MSCB)University
   Odisha, India
4. **Dr. Asit K Das**
   Professor & Head, Department of CST,
   IIEST Shibpur, Howrah, India.
5. **Dr. Seungmin Rho**
   Associate Professor, Chung-Ang University,
   Seoul, Korea.
6. **Dr. Mohammed S Khan**
   Director of Network Science and Analysis Lab(NSAL)
   East Tennessee State University
   Johnson City, USA
7. **Dr. Victor Hugo C. de Albuquerque**
   Professor
   University of Fortaleza(UNIFOR), Brazil
8. **Dr. AlirezaSouri**
   Halic University
   Turkey
9. **Dr. Hossein Anisi**
   Professor & Head of the Internet of Everything (IoE) Laboratory
   University of Essex, UK
10. **Dr. Ruben Gonzalez Crespo**
    Professor of Computer Science and Artificial Intelligence,
    International University of La Rioja,
    Spain
11. **Dr. Noor Zaman Jhanji**
    Director Center for Smart Society 5.0[CSS5]
    Associate Professor, Dept of CS,
    Taylor's University,
    Malaysia.

International Collaboration

1.Publications

Institute/University	Country	No. of Publication
Noroff university college, Kristiansand Shaqra University	Norway	7
University ofTeramo, Teramo,	Italy	2
Asia University, China Medical University, Foshan University,Foshan, Nanjing University of Information Science and Technology, Nanjing, China	China	6
ChulalongkornUniversity,Bangkok	Thailand	1
KingSaudUniversity,Taif University, University of Sfax, Sfax, Tunisia, University of Jeddah, Qassim University	SaudiArabia	8
Papua New Guinea University of Technology	Papua New Guinea	1
Taylor's University, Xiamen University	Malaysia	5
Sejong University,Soonchunhyang University, Chung-Ang University,Sun Moon University, Zhujiaffiliatedhospital of Shaoxing University, Hanshin University, Hanshin University, Kyungpook National University, Chung-Ang University, Chung-Ang University	South Korea	17
Lebanese French University, Erbil,	Iraq	6
InternationalUniversityofLaRioja	Spain	3
RMIT University	Australia	2
University of Central Punjab, Lahore	Pakistan	1
Hamad Bin Khalifa University, Doha,	Qatar	1
Cairo University, University of Tartu	Egypt	2
Science and Research Branch, Islamic Azad University, Tehran,	Iran	1
Hamad Bin Khalifa University, Doha	Qatar	1
Halic University	Turkey	1
University of Maryland, Baltimore County	USA	1

2. MOU

1. Ubiquitous Computing and Security (UCS) Lab Seoul National University of Science and Technology, Korea

2. MOBILE GRID AND CLOUD COMPUTING LAB, Department of Information Communication Engineering, Hankuk University of Foreign Studies, Korea

Scope

- Collaborative publication, Joint projects, organizing bilateral programmes

UCS lab

UCS lab team

Taylor's University, Malaysia

Dr. Noor ZamanJhanjhi, Associate Professor, School of Computer Science and Engineering, Faculty of Innovation and Technology, |Director Center for Smart Society 5.0 and Cluster Head for Cyber security cluster, Taylor's University, Malaysia.

Scope

- Collaborative publication, joint projects, organizing bilateral programmes

HoD & Honorary professor

Dr.M.Kaliappan
Professor and Head

Area of Interest: Artificial Intelligence , Data Analytics

Journal Publication: SCIE : 25, SCOPUS:03

Conference Publications: 15

Book Chapter: 05

Patent: 04

H-Index:17

Pursuing Post-Doctoral - Federal University of Ceara, Brazil

IEI sponsored project completed: 01

Theme: Deep learning

HONORARY PROFESSOR
Dr. Tu Nguyen,

Director of Intelligence System lab, Department of Computer Science, Kennesaw State University, Georgia, USA

Scope

- Promote collaboration in research and academic activities

Anna University, Chennai Recognized Supervisors

The Department has applied for Research Centre Recognition under Anna University in Dec 2022(Ref.No:16IR2331)

SI.NO	Name	Supervisor Number
1.	Dr.M.Kaliappan	2740025
2.	Dr.E.Mariappan	2940087

Ph.D. Holders

Name:	**Dr.M. Kaliappan**
Designation:	Professor and Head
Research Area:	Artificial Intelligence, Data Analytics.

Name:	**Dr. E. Mariappan**
Designation:	Professor
Research Area:	Wireless Sensor Networks, IoT, Blockchain Technology, Data Mining, Cloud Computing and Big Data.

Name:	**Dr. P. Elamparithi**
Designation:	Associate Professor
Research Area:	Mobile Ad Hoc Networks, Machine Learning and Internet of Things.

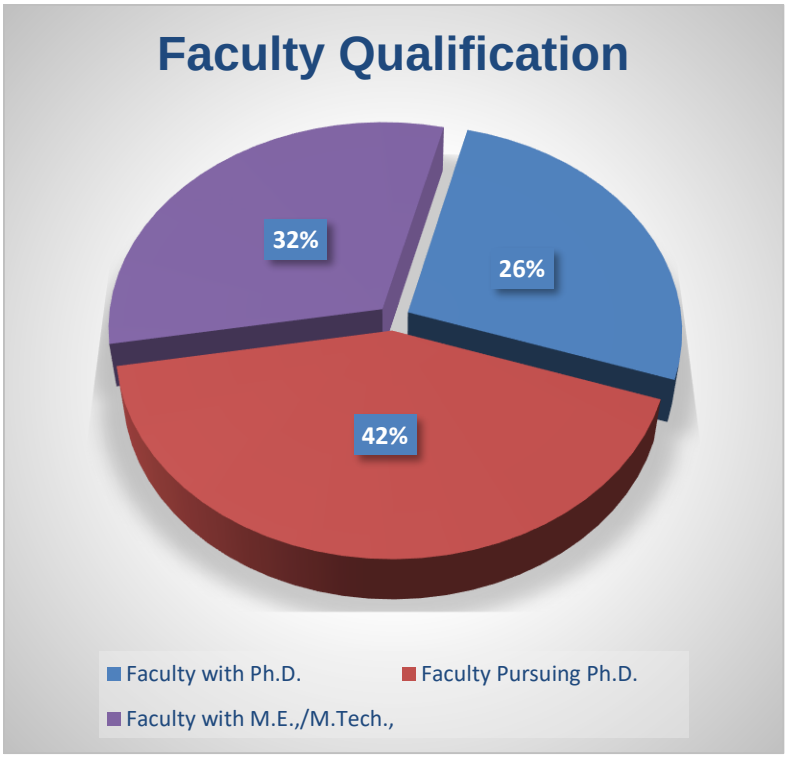
Name:	**Dr. S. Selva Birundha**
Designation:	Associate Professor
Research Area:	Machine Learning, Deep Learning and Natural Language Processing.

Name:	**Dr. R. M. Rajeswari**
Designation:	Associate Professor
Research Area:	Network Security and Wireless Networks.

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

R & D CENTRE CODE: 4467830

S.No.	Type of Publications	Count
1.	Journal Publication	17
2.	Conference Publication	8
3.	Book Chapter Publication	7
4.	Patent Publication	3



DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

CALENDAR YEAR 2024

Journal Publication

1. S Pradeepa, Gaspar Niveda, S Vimal, P Subbulakshmi, Ahmed Alkhayyat, M Kaliappan, "Classifying promoters by interpreting the hidden information of DNA sequences for disease prediction in clinical laboratories using Gaussian decision boundary estimation", Intelligent Decision Technologies, IOS Press, Feb 2024, Vol. 18, No. 1, Page No. 613 – 631, DOI: https://doi.org/10.3233/IDT-230283.
2. Pandit Byomokesha Dash, Manas Ranjan Senapati, HS Behera, Janmenjoy Nayak, S Vimal, "Self-adaptive memetic firefly algorithm and CatBoost-based security framework for IoT healthcare environment", Journal of Engineering Mathematics, Springer Netherlands, Feb 2024, Vol. 144, No. 6, DOI: https://doi.org/10.1007/s10665-023-10309-z.
3. Gaurav Dhiman Dukka Karun Kumar Reddy, Janmenjoy Nayak, H.S Behera, Vimal Shanmuganathan, "A systematic literature review on swarm intelligence based intrusion detection system: past, present and future", Archives of Computational Methods in Engineering, Springer, Mar 2024, Vol. 31, Page No. 2717 – 2784, DOI: https://doi.org/10.1007/s11831-023-10059-2.
4. Sampath, S, Kaliappan M, Sasikaladevi, N, Vimal, "OralNet: deep learning fusion for oral cancer identification from lips and tongue images using stochastic gradient based logistic regression", Network Modeling Analysis in Health Informatics and Bioinformatics, Springer, May 2024, Vol. 13, No. 24, DOI: https://doi.org/10.1007/s13721-024-00459-0.
5. Appu Alfred Raja Melvin, Gnanaraj Jaspher W Kathrine, Subbulakshmi Pasupathi, Vimal Shanmuganathan, Rajalingam Naganathan, "An AI powered system call analysis with bag of word approaches for the detection of intrusions and malware in Australian Defence Force Academy and virtual machine monitor malware attack data set", Expert Systems, Wiley, May 2024, Vol No. 41, No. 6, Page No. e13029, DOI: https://doi.org/10.1111/exsy.13029.
6. N Sasikaladevi, S Pradeepa, A Revathi, S Vimal, Gaurav Dhiman, "Anti-Diabetic Therapeutic Medicinal Plant Identification Using Deep Fused Discriminant Subspace Ensemble (D2 SE)", International Journal of Interactive Multimedia and Artificial Intelligence (IJIMAI), May 2024, In press, DOI: http://dx.doi.org/10.9781/ijimai.2024.05.003.
7. Asad Abbas, Roobaea Alroobaea, Moez Krichen, Saeed Rubaiee, S Vimal, Fahad M Almansour, "Blockchain-assisted secured data management framework for health information analysis based on Internet of Medical Things", Personal and ubiquitous computing, Springer London, Jun 2024, Vol. 28, No. 1, Page No. 59 – 72, DOI: https://doi.org/10.1007/s00779-021-01583-8.
8. Mahmood A Jumaah, Yossra H Ali, Tarik A Rashid, S Vimal, "FOXANN: A Method for Boosting Neural Network Performance", arXiv preprint arXiv:2407.03369, Jun 2024 Page No. 1 – 12, https://doi.org/10.48550/arXiv.2407.03369

9. Vimal. S Chopra, Garima, rani, shalli, Viriyasitavat Wattana, Dhiman Gaurav, kaur Amandeep, “UAV-assisted partial co-operative NOMA based resource allocation in C2VX and TinyML based use case scenario”, IEEE Internet of Things Journal, IEEE, Jun 2024, Vol. 11, No. 12, Page No. 21402 – 21410, DOI: https://doi.org/10.1109/JIOT.2024.3351733.
10. Jothilakshmi Selvakani, .L., Ranganathan, B. & Palanisamy, G., “A novel key point based ROI segmentation and image captioning using guidance information”, Machine Vision and Applications, Sep 2024, Vol. 35, No. 127, DOI: https://doi.org/10.1007/s00138-024-01597-1.
11. Amandeep Kaur Pinki, Rakesh Kumar, S Vimal, Norah Saleh Alghamdi, Gaurav Dhiman, Subbulakshmi Pasupathi, Aarna Sood, Wattana Viriyasitavat, Assadaporn Sapsomboon, “Artificial intelligence-enabled smart city management using multi-objective optimization strategies”, Expert Systems, Wiley, In press, DOI: https://doi.org/10.1111/exsy.13574.
12. Dr.E.Mariappan, Mr.D.Asir, Dr.T.Jasperline, Dr.P.Elamparithi, Dr.A.Jegadeesh, Dr.M.Kaliappan, Mr.M.Ramnath, Mrs.R.Angel Hepzibah, “Enhanced Solar Plant Positioning Using Moth-Flame Optimization Technique”, AJBR, Oct 2024, Vol. 27, No. 3S, Page No. 4405 – 4412, DOI: https://doi.org/10.53555/AJBR.v27i3S.2845.
13. Ramnath M, Dr. A. Anna Lakshmi, Karpagavalli C, Saravanan T, Logapriya V, Blessing karunya T, Twinkle Geojini G, Dr. Mariappan E, “Heart Disease Prediction: A Machine Learning Model for Evaluation and Hyperparameter Tuning”, AJBR, Oct 2024, Vol. 27, No. 3S, Page No. 4458 – 4468, DOI: https://doi.org/10.53555/AJBR.v27i3S.2891.
14. Dr. Marriappan E, Dr. Anna Lakshmi A, Amala Princeton X, Vetrivel P, Dr. Ramasamy S, Angel Hephzibah R, Dr. Kaliappan M, & Ramnath M, “An Examining Cluster Behaviour Analytically Using K- Means, EM, And K* Means Algorithm”, In Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/ Journal of Tianjin University Science and Technology, Oct 2024, Vol. 57, No. 10, Page No. 124 – 135, Zenodo, ISSN (Online): 0493 – 2137, DOI: https://doi.org/10.5281/zenodo.14038149.
15. Vaissnave V, Amuthachenthiru K, Durga Devi G, Dr. Anna Lakshmi A, Dr. Jenifer John J, Ramnath M, & Dr. Mariappan E, “LDPC Code Based Autoencoder of AWSN Using Deep Neural Networks Model For Wireless Communication Channel”, In Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/ Journal of Tianjin University Science and Technology, Nov 2024, Vol. 57, No. 11, Page No. 21 – 33, Zenodo, DOI: https://doi.org/10.5281/zenodo.14043365.
16. Angel Hepzibah R., Anna Lakshmi A., Mariappan E., Kaliappan M., Sugel Anandh O., Amala Princeton X., Ramnath M., & Karpagavalli C, “Dragonfly Algorithm-Based Approach for Solar Power Plant Optimization in IEEE 69-Bus Network”, International Journal of Science, Mathematics and Technology Learning, Nov 2024, Vol. 32, No. 2, Page No. 200 – 212, ISSN: 2327 – 915X, DOI: https://doi.org/10.5281/zenodo.14058771.
17. Ramnath M., Yesubai Rubavathi, “Enhancing AppAuthentix recommender systems using advanced machine learning techniques to identify genuine and counterfeit android applications”, PeerJ Computer Science, Nov 2024, 10:e2515, DOI: https://doi.org/10.7717/peerj-cs.2515.
18. Karpagavalli, C., Harsha, A. S., Mahadevan, N., Rachel, P. P., Kathir, I., Kistan, A., Janani, M., Philip, J. M., & Rajaram, A. (2024). Advanced Wastewater Treatment using Energy -- Efficient Fenton Process Optimised with Deep Learning. in Oxidation Communications (Vol. 47, Issue 4, pp. 828–836).

Conference Publication

1. Ramnath.M Kaliappan Madasamy, Vimal Shanmuganathan, Nithish, Vishakan, Vijayabhaskar, Muthukumar, Balamurali Ramakrishnan, “Benign and Malignant Cancer Prediction using Deep Learning and Generating Pathologist Diagnostic Report”, International Conference on IoT and Health (IoTHIC 2023): Artificial Intelligence for Internet of Things (IoT) and Health Systems Operability, Feb 2024, Vol No. 8, Page No. 73 – 87, DOI: https://doi.org/10.1007/978-3-031-52787-6_7.
2. C Karpagavalli, A Nelson, R Raja, E Saranya, Manzoore Elahi M Soudagar, Christu Paul Ramaian, “Incorporating Transfer Learning in Engine Health Assessment for Accurate Remaining Useful Life Prediction”, 2024 3rd International Conference on Sentiment Analysis and Deep Learning (ICSADL), IEEE, Mar 2024, Page No. 463 – 468, Doi: https://doi.org/10.1109/ICSADL61749.2024.00081.
3. Sumit Kushwaha, K Amuthachenthiru, Jonnadula Narasimharao, Dileep Kumar, Sai Sudha Gadde, “Development of Advanced Noise Filtering Techniques for Medical Image Enhancement”, 2024 5th International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV), IEEE, Mar 2024, Page No. 906 – 912, DOI: https://doi.org/10.1109/ICICV62344.2024.00149.
4. C. Usharani, B. Revathi, A. Selvapandian, S. K. Kezial Elizabeth, “Lung Cancer Detection in CT Images Using Deep Learning Techniques: A Survey Review”, EAI Endorsed Transactions on Pervasive Health and Technology, Mar 2024, Vol. 10, DOI: https://doi.org/10.4108/eetpht.10.5265.
5. V. S. Kumar, C. Karpagavalli, S. Pradeep, S. Divya, S. N. Taqui and N. Vinayagam, "Deep Learning-Based EEG Signal Classification of Epileptic Patients", 2024 International Conference on Expert Clouds and Applications (ICOECA), Bengaluru, India, Apr 2024, Page No. 626-631, DOI: https://doi.org/10.1109/ICOECA62351.2024.00114.
6. B. Revathi, C. Usharani, S. K. Kezial Elizabeth, N. P and D. Nithya, "Deep Learning Classification Techniques on Detecting Diabetic Retinopathy Dataset", 2024 International Conference on Inventive Computation Technologies (ICICT), Lalitpur, Nepal, Apr 2024, Page No. 663-668, DOI: https://doi.org/10.1109/ICICT60155.2024.10544960.
7. R. Kumar Saidala, M. Ramnath, K. C. R, N. Gowri Vidhya, S. N. Taqui and R. M, "Advancing Brain-Computer Interaction: EEG-based Eye Movement Recognition with AI," 2024 International Conference on Inventive Computation Technologies (ICICT), Lalitpur, Nepal, Apr 2024, pp. 44-48, DOI: https://doi.org/10.1109/ICICT60155.2024.10544675.
8. Ramaiah, P., Pandian, E., Ponnusamy, C., Degala, D., Subramanian, B., Alagarsamy, M., “Exploration of Key components in wireless sensor networks utilizing Artificial Intelligence and virtualized security”, in Proceedings of the 5th International Electronic Conference on Applied Sciences, 4–6 December 2024, MDPI: Basel, Switzerland.

Book Chapter Publication

1. Sampath Pradeepa, Shanmuganathan Vimal, Nayak Janmenjoy, Chakrabarti Prasun, Kaliappan, Madasamy, “A Knowledge Discovery framework for Coronavirus Disease 2019 (COVID -19) disease from PubMed Abstract using Association Rule Hypergraph (AR-Hypergraph)”, Data Science in medical field, Academic Press, Elsevier, Chapter No. 7, Page No. 83 – 97, Jan 2024. ISBN 9780443240287, DOI: https://doi.org/10.1016/B978-0-443-24028-7.00008-8.
2. C Karpagavalli, M Kaliappan, “Machine Learning and Deep Learning Real Time Applications”, Futuristic Trends in Artificial Intelligence, Iterative International Publishers, May 2024, Vol. 3, Chapter No. 2, Book No. 10, Page No. 77-82, e-ISBN: 978- 93-6252-530-7.
3. Ms. K. Amuthachenthiru, Dr. M. Kaliappan, Dr. S. Vimal, “Machine Learning and Deep Learning Applications”, Futuristic Trends in Artificial Intelligence, Iterative International Publishers, May 2024, Vol. 3, Chapter No. 8, Book No. 3, Page No. 204 - 229, e-ISBN: 978-93-6252-144-6, DOI: https://www.doi.org/10.58532/V3BKAI3P3CH8.
4. Mr. M. Ramnath, Dr. C. Yesubai Rubavathi, “Study of Personal Reviews of Mobile Users”, Futuristic Trends in Artificial Intelligence, Iterative International Publishers, May 2024, Vol. 3, Chapter No. 1, Book No. 10, Page No. 65 - 76, e-ISBN: 978-93-6252-530-7, DOI: https://www.doi.org/10.58532/V3BGAI10P2CH1.
5. P. Nagaraj, S. Selva Birunda, “Detection and Prevention of Fake News and Hate Speech through Machine Learning and Natural Language Processing”, Text and Social Media Analytics for Fake News and Hate Speech Detection, Taylor & Francis, Aug 2024, Page No. 31, eISBN: 9781003409519, https://doi.org/10.1201/9781003409519.
6. D Vetrithangam, CR Komala, D Sugumar, Y Mallikarjuna Rao, C Karpagavalli, B Kiruthiga, “AI's Role in 6G Security Machine Learning Solutions Unveiled”, Security Issues and Solutions in 6G Communications and Beyond, IGI Global, 2024, Page No. 26 – 44, DOI: 10.4018/979-8-3693-2931-3.ch003.
7. J Barnabas Paul Glady, Sonia Maria D'Souza, A Parvathi Priya, K Amuthachenthiru, G Vikram, S Boopathi, “A Study on AI-ML-Driven Optimizing Energy Distribution and Sustainable Agriculture for Environmental Conservation”, Harnessing High-Performance Computing and AI for Environmental Sustainability, IGI Global, Page No. 1 – 27, DOI: 10.4018/979-8-3693-1794-5.ch00.

Patent Publication

S.No.	Title of the Invention	Application Number	Filling Date	Status	Date of Publication
1.	System and Model for Clinical Decision Support System for Risk Categorization using Machine Learning	202341084874	12.12.2023	Published	12.01.2024
2.	Climate based Self-Speed Control System in Car using Artificial Intelligence	202441001629	09.01.20024	Published	09.02.2024
3.	Food Delivery Robot	202441074652	03.10.2024	Published	11.10.2024

Conference Publication

1. Ramnath.M Kaliappan Madasamy, Vimal Shanmuganathan, Nithish, Vishakan, Vijayabhaskar, Muthukumar, Balamurali Ramakrishnan, “Benign and Malignant Cancer Prediction using Deep Learning and Generating Pathologist Diagnostic Report”, International Conference on IoT and Health (IoTHIC 2023): Artificial Intelligence for Internet of Things (IoT) and Health Systems Operability, Feb 2024, Vol No. 8, Page No. 73 – 87, DOI: https://doi.org/10.1007/978-3-031-52787-6_7.
2. C Karpagavalli, A Nelson, R Raja, E Saranya, Manzoore Elahi M Soudagar, Christu Paul Ramaian, “Incorporating Transfer Learning in Engine Health Assessment for Accurate Remaining Useful Life Prediction”, 2024 3rd International Conference on Sentiment Analysis and Deep Learning (ICSADL), IEEE, Mar 2024, Page No. 463 – 468, Doi: https://doi.org/10.1109/ICSADL61749.2024.00081.
3. Sumit Kushwaha, K Amuthachenthiru, Jonnadula Narasimharao, Dileep Kumar, Sai Sudha Gadde, “Development of Advanced Noise Filtering Techniques for Medical Image Enhancement”, 2024 5th International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV), IEEE, Mar 2024, Page No. 906 – 912, DOI: https://doi.org/10.1109/ICICV62344.2024.00149.
4. C. Usharani, B. Revathi, A. Selvapandian, S. K. Kezial Elizabeth, “Lung Cancer Detection in CT Images Using Deep Learning Techniques: A Survey Review”, EAI Endorsed Transactions on Pervasive Health and Technology, Mar 2024, Vol. 10, DOI: https://doi.org/10.4108/eetpht.10.5265.
5. V. S. Kumar, C. Karpagavalli, S. Pradeep, S. Divya, S. N. Taqui and N. Vinayagam, "Deep Learning-Based EEG Signal Classification of Epileptic Patients", 2024 International Conference on Expert Clouds and Applications (ICOECA), Bengaluru, India, Apr 2024, Page No. 626-631, DOI: https://doi.org/10.1109/ICOECA62351.2024.00114.
6. B. Revathi, C. Usharani, S. K. Kezial Elizabeth, N. P and D. Nithya, "Deep Learning Classification Techniques on Detecting Diabetic Retinopathy Dataset", 2024 International Conference on Inventive Computation Technologies (ICICT), Lalitpur, Nepal, Apr 2024, Page No. 663-668, DOI: https://doi.org/10.1109/ICICT60155.2024.10544960.
7. R. Kumar Saidala, M. Ramnath, K. C. R, N. Gowri Vidhya, S. N. Taqui and R. M, "Advancing Brain-Computer Interaction: EEG-based Eye Movement Recognition with AI," 2024 International Conference on Inventive Computation Technologies (ICICT), Lalitpur, Nepal, Apr 2024, pp. 44-48, DOI: https://doi.org/10.1109/ICICT60155.2024.10544675.
8. Ramaiah, P., Pandian, E., Ponnusamy, C., Degala, D., Subramanian, B., Alagarsamy, M., “Exploration of Key components in wireless sensor networks utilizing Artificial Intelligence and virtualized security”, in Proceedings of the 5th International Electronic Conference on Applied Sciences, 4–6 December 2024, MDPI: Basel, Switzerland.

Book Chapter Publication

1. Sampath Pradeepa, Shanmuganathan Vimal, Nayak Janmenjoy, Chakrabarti Prasun, Kaliappan, Madasamy, “A Knowledge Discovery framework for Coronavirus Disease 2019 (COVID -19) disease from PubMed Abstract using Association Rule Hypergraph (AR-Hypergraph)”, Data Science in medical field, Academic Press, Elsevier, Chapter No. 7, Page No. 83 – 97, Jan 2024. ISBN 9780443240287, DOI: https://doi.org/10.1016/B978-0-443-24028-7.00008-8.
2. C Karpagavalli, M Kaliappan, “Machine Learning and Deep Learning Real Time Applications”, Futuristic Trends in Artificial Intelligence, Iterative International Publishers, May 2024, Vol. 3, Chapter No. 2, Book No. 10, Page No. 77-82, e-ISBN: 978- 93-6252-530-7.
3. Ms. K. Amuthachenthiru, Dr. M. Kaliappan, Dr. S. Vimal, “Machine Learning and Deep Learning Applications”, Futuristic Trends in Artificial Intelligence, Iterative International Publishers, May 2024, Vol. 3, Chapter No. 8, Book No. 3, Page No. 204 - 229, e-ISBN: 978-93-6252-144-6, DOI: https://www.doi.org/10.58532/V3BKAI3P3CH8.
4. Mr. M. Ramnath, Dr. C. Yesubai Rubavathi, “Study of Personal Reviews of Mobile Users”, Futuristic Trends in Artificial Intelligence, Iterative International Publishers, May 2024, Vol. 3, Chapter No. 1, Book No. 10, Page No. 65 - 76, e-ISBN: 978-93-6252-530-7, DOI: https://www.doi.org/10.58532/V3BGAI10P2CH1.
5. P. Nagaraj, S. Selva Birunda, “Detection and Prevention of Fake News and Hate Speech through Machine Learning and Natural Language Processing”, Text and Social Media Analytics for Fake News and Hate Speech Detection, Taylor & Francis, Aug 2024, Page No. 31, eISBN: 9781003409519, https://doi.org/10.1201/9781003409519.
6. D Vetrithangam, CR Komala, D Sugumar, Y Mallikarjuna Rao, C Karpagavalli, B Kiruthiga, “AI's Role in 6G Security Machine Learning Solutions Unveiled”, Security Issues and Solutions in 6G Communications and Beyond, IGI Global, 2024, Page No. 26 – 44, DOI: 10.4018/979-8-3693-2931-3.ch003.
7. J Barnabas Paul Glady, Sonia Maria D'Souza, A Parvathi Priya, K Amuthachenthiru, G Vikram, S Boopathi, “A Study on AI-ML-Driven Optimizing Energy Distribution and Sustainable Agriculture for Environmental Conservation”, Harnessing High-Performance Computing and AI for Environmental Sustainability, IGI Global, Page No. 1 – 27, DOI: 10.4018/979-8-3693-1794-5.ch00.

Patent Publication

S.No.	Title of the Invention	Application Number	Filling Date	Status	Date of Publication
1.	System and Model for Clinical Decision Support System for Risk Categorization using Machine Learning	202341084874	12.12.2023	Published	12.01.2024
2.	Climate based Self-Speed Control System in Car using Artificial Intelligence	202441001629	09.01.20024	Published	09.02.2024
3.	Food Delivery Robot	202441074652	03.10.2024	Published	11.10.2024

Intelligent Decision Technologies 18 (2024) 613–631
DOI 10.3233/IDT-230283
IOS Press

Classifying promoters by interpreting the hidden information of DNA sequences for disease prediction in clinical laboratories using Gaussian decision boundary estimation

Pradeepa S[a,*], Niveda Gaspar[a], Vimal Shanmuganathan[b,*], Subbulakshmi P[c], Ahmed Alkhayyat[d] and Kaliappan M[b]
[a]*Department of CSE, SASTRA Deemed University, Thanjavur, Tamil Nadu, India*
[b]*Department of Artificial Intelligence and Data Science, Deep Learning Lab, Ramco Institute of Technology, Rajapalayam, Tamil Nadu, India*
[c]*School of Computer Science and Engineering, VIT Chennai Campus, Tamil Nadu, India*
[d]*Department of Computer Technical Engineering, College of Technical Engineering, The Islamic University, Najaf, Iraq*

Received 7 August 2023
Accepted 10 October 2023

Abstract. A promoter is a brief stretch of DNA (100–1,000 bp) where RNA polymerase starts to transcribe a gene. A DNA (Deoxyribonucleic Acid) base pair is a fundamental unit of DNA structure and represents the pairing of two complementary nucleotide bases within the DNA double helix. The four DNA nucleotide bases are adenine (A), thymine (T), cytosine (C), and guanine (G). DNA base pairs are the building blocks of the DNA molecule, and their complementary pairing is central to the storage and transmission of genetic information in all living organisms. Normally, a promoter is found at the 5′ end of the transcription initiation site or immediately upstream. Numerous human disorders, particularly diabetes, cancer, and Huntington's disease, have been shown to have DNA promoter as their root cause. The scientific community has long been interested in learning crucial information about protein-coding genes. Finding the promoters is therefore the first step in finding genes in DNA sequences. The scientific world has always been attracted by the effort to glean crucial knowledge about protein-coding genes. Consequently, identifying promoters has emerged as an intriguing challenge that has caught the interest of numerous researchers in the field of bioinformatics. We proposed Gaussian Decision Boundary Estimation in machine learning models to detect transcription start sites (promoters) in the DNA sequences of a common bacteria, Escherichia coli. The best features are identified through a score-based function to select relevant nucleotides that are directly responsible for promoter recognition, in order maximise the models' performance. The Gaussian Decision Boundary Estimation based support-vector-machine model is trained with these features and finds the best hyperplane that separates the data into different classes. Throughout this study, promoter regions could be identified with high accuracy 99.9% which is better compared to other state of art algorithms. The comparison of machine learning classification models is another major emphasis of this paper in order to identify the model that most accurately predicts DNA sequence promoters. It provides analysis for further biological research as well as precision medicine.

Keywords: Promoter, DNA, Bioinformatics, machine learning, gaussian decision boundary estimation

*Corresponding authors: Pradeepa S, Department of CSE, SASTRA Deemed University, Thanjavur, TamilNadu, India. E-mail: pradeepa.pradee@gmail.com. Vimal Shanmuganathan, Deep Learning Lab, Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, tamilnadu, India. E-mail: svimalphd@gmail.com.

ISSN 1872-4981/$35.00

Self-adaptive memetic firefly algorithm and CatBoost-based security framework for IoT healthcare environment

Published: 18 December 2023

Volume 144, article number 6, (2024) Cite this article

Journal of Engineering Mathematics

Aims and scope

Submit manuscript

Pandit Byomokesha Dash, Manas Ranjan Senapati, H. S. Behera, Janmenjoy Nayak & S. Vimal

Abstract

The Internet of Things (IoT), which has had a revolutionary influence on human existence, has become a topic of significant attention among the scientific and industrial communities. Smart healthcare, smart cities, smart devices, smart industry, smart grid, and smart cities are just a handful of the many IoT ideas that have altered human life due to the rapid progress of this IoT technology. Security issues involving IoT devices have come up as a significant issue in recent years with special emphasis on the healthcare sector. This increased emphasis is mostly due to the exposure of serious vulnerabilities in IoT security with recent hacking activities. There is significant proof that conventional

A Systematic Literature Review on Swarm Intelligence Based Intrusion Detection System: Past, Present and Future

Survey article Published: 01 March 2024

Volume 31, pages 2717–2784, (2024) Cite this article

Archives of Computational Methods in Engineering

Aims and scope

Submit manuscript

Dukka Karun Kumar Reddy, Janmenjoy Nayak, H. S. Behera, Vimal Shanmuganathan, Wattana Viriyasitavat & Gaurav Dhiman

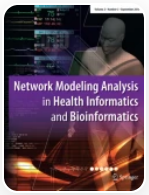
Abstract

Swarm Intelligence (SI) has proven to be useful in solving issues that are difficult to solve using traditional mathematical methodologies by using a collective behavior of a decentralized or self-organized system. SI-based optimization algorithms use a collaborative trial-and-error process to identify a solution. The development of various efficient swarm optimization methods is largely due to the peer-to-peer learning behavior of social colonies. SI is deeply engaged in the realm of IoT (Internet of Things) and IoT-based systems to control the operations logically. The mounting complexity of IoT devices' infrastructure framework and continuous communication is lifting

OralNet: deep learning fusion for oral cancer identification from lips and tongue images using stochastic gradient based logistic regression

Original Article Published: 10 May 2024

Volume 13, article number 24, (2024) Cite this article



Network Modeling Analysis in Health Informatics and Bioinformatics

Aims and scope

Submit manuscript

Pradeepa Sampath, N. Sasikaladevi, S. Vimal & M. Kaliappan

Abstract

Timely detection of oral cancer plays a critical role in improving survival rates. While traditional biopsy procedures can be invasive and uncomfortable, a more non-intrusive and convenient alternative is fluorescence visualization using optical instruments. This method not only provides real-time results but also facilitates repeat examinations. In the current research, an innovative strategy for oral cancer identification is introduced, utilizing images

Expert Systems / Volume 41, Issue 6 / e13029

ORIGINAL ARTICLE

An AI powered system call analysis with bag of word approaches for the detection of intrusions and malware in Australian Defence Force Academy and virtual machine monitor malware attack data set

Appu Alfred Raja Melvin, Gnanaraj Jaspher W. Kathrine, Subbulakshmi Pasupathi, Vimal Shanmuganathan, Rajalingam Naganathan

First published: 18 May 2022
https://doi.org/10.1111/exsy.13029
Citations: 2

Correction added on 27 May 2022 after first online publication: Author name has been corrected in this version.

Abstract

This study propose the use of AI enabled machine learning algorithms with the Bag-of-Word (BoW) methods for the detection of intrusions by analysing the system call patterns. Host based Intrusion Detection System can make use of system call patterns to differentiate between normal and anomalous program behaviours. First, the system call patterns are pre-processed with different approaches like BoW, BoW with Boolean value, BoW with Probability value and BoW with TF-IDF. Next machine learning algorithms are used to evaluate the performance of classifier models. We used J48 (C4.5), Random Forrest, RIPPER, KNN, SVM, and NaiveBayes ML algorithms. This process was carried out on ADFA-LD and on our proposed virtual machine monitor (VMM) malware attack data set for analysis. The proposed work is evaluated based on detection accuracy and false alarm rate metrics. Random Forrest algorithm performs better compared with other ML algorithms in terms of intrusion detection accuracy and false alarm rate on ADFA and VMM malware data set. The proposed data set provide better results compared with ADFA-LD analysed using ML algorithms. The classifier model trained with ADFA and VMM malware system call data sets may do predictive analytics in detecting security issues for Industry 4.0 systems.

Anti-Diabetic Therapeutic Medicinal Plant Identification Using Deep Fused Discriminant Subspace Ensemble (D²SE)

N. Sasikaladevi[1], S. Pradeepa[2], A. Revathi[3], S. Vimal[4]*, Gaurav Dhiman[5,6,7]*

[1] Department of Computer Science and Engineering, SASTRA Deemed University, Thanjavur-613 401, Tamil Nadu (India)
[2] Department of Information Technology, SASTRA Deemed University, Thanjavur -613 401, Tamil Nadu (India)
[3] Department of Electrical and Computer Engineering, SASTRA Deemed University, Thanjavur -613 401, Tamil Nadu (India)
[4] Department of Artificial Intelligence & Data Science, Sri Eshwar College of Engineering, Coimbatore, Tamil Nadu (India)
[5] Department of Electrical and Computer Engineering, Lebanese American University, Byblos (Lebanon)
[6] Centre of Research Impact and Outcome, Chitkara University Institute of Engineering and Technology, Chitkara University, Punjab (India)
[7] MEU Research Unit, Middle East University, Amman (Jordan)

* Corresponding author: svimalphd@gmail.com (S.Vimal), gdhiman0001@gmail.com (G. Dhiman)

Received 29 March 2023 | Accepted 1 September 2023 | Early Access 27 May 2024

Abstract

About 422 million people worldwide have diabetes, the majority living in low-and middle-income countries, and 1.5 million deaths are directly attributed to diabetes each year. According to the Botanical Survey of India, India is home to more than 8,000 species of medicinal plants. The natural medications with antidiabetic activity are widely formulated because they have better compatibility with human body, are easily available and have less side effects. They may act as an alternative source of antidiabetic agents. The fused deep neural network (DNN) model with Discriminant Subspace Ensemble is designed to identify the diabetic plants from VNPlant200 data set. Here, the deep features are extracted using DenseNet201 and the matrix-based discriminant analysis is adopted to learn the discriminative feature subspace for classification. To further improve the performance of discriminative subspace, a nearest neighbors technique is used to produce a subspace ensemble for final diabetic therapeutic medicinal plant image classification. The developed model attained the highest accuracy of 97.5% which is better compared to other state of art algorithms. Finally, the model is integrated into a mobile app for robust classification of anti-diabetic therapeutic medicinal plant with real field images.

Keywords

Classification, Deep Learning, Diabetic Plant Identification, Discriminant Subspace Ensemble, Internet Of Things (IoT).

DOI: 10.9781/ijimai.2024.05.003

I. Introduction

IN 2021, approximately 537 million adults (20-79 years) are living with diabetes. The total number of people living with diabetes is projected to rise to 643 million by 2030 and 783 million by 2045.3 in 4 adults with diabetes live in low- and middle-income countries. Almost 1 in 2 (240 million) adults living with diabetes are undiagnosed. Diabetes caused 6.7 million deaths. Diabetes caused at least USD 966 billion dollars in health expenditure – 9% of total spending on adults. More than 1.2 million children and adolescents (0-19 years) are living with type 1 diabetes. 1 in 6 live births (21 million) are affected by diabetes during pregnancy. 541 million adults are at increased risk of developing type 2 diabetes. Antidiabetic herbal formulations are considered to be more effective for treatment of diabetes. A high number of plants and plant products have been scientifically tested and reported to possess anti diabetic activity [1].

Antidiabetic herbal formulations are considered to be more effective for treatment of diabetes. The global worsening of morbidity and mortality from diabetes [2] [3] justifies the need for more diversified research for new therapies. Throughout human history, medicinal plants have been used for the prevention and treatment of both human and animal diseases [4] [5]. Medicinal plants have been recognized as a stable source for drug discovery since ancient times [6] [7] and The World Health Organization has reported an increased patronage of natural and medicinal plant drug products[1].

[1] https://www.who.int/health-topics/diabetes

Please cite this article as:
N. Sasikaladevi, A. Revathi, S. Pradeepa, S.Vimal, G. Dhiman. Anti-Diabetic Therapeutic Medicinal Plant Identification Using Deep Fused Discriminant Subspace Ensemble (D²SE), International Journal of Interactive Multimedia and Artificial Intelligence, (2024), http://dx.doi.org/10.9781/ijimai.2024.05.003

Blockchain-assisted secured data management framework for health information analysis based on Internet of Medical Things

Original Article Published: 19 June 2021

Volume 28, pages 59–72, (2024) Cite this article

Personal and Ubiquitous Computing

Aims and scope

Submit manuscript

Asad Abbas, Roobaea Alroobaea, Moez Krichen, Saeed Rubaiee, S. Vimal & Fahad M. Almansour

A Correction to this article was published on 20 August 2021

This article has been updated

Abstract

The Internet of Medical Things (IoMT) is a kind of associated smart-medical device infrastructure with applications, health services, and systems. These medical devices and

FOXANN: A Method for Boosting Neural Network Performance

Mahmood A. Jumaah[1]* **Yossra H. Ali[2]** **Tarik A. Rashid[3]** **S. Vimal[4]**

[1,2]*Department of Computer Science, University of Technology- Iraq, Baghdad, Iraq*
[3]*Department of Computer Science and Engineering, University of Kurdistan Hewlêr, Erbil, Iraq*
[4]*Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, India*

* Corresponding author's Email: cs.22.27@grad.uotechnology.edu.iq
[2] Yossra.H.Ali@uotechnology.edu.iq
[3] tarik.ahmed@ukh.edu.krd
[4] vimal@ritrjpm.ac.in

Abstract

Artificial neural networks play a crucial role in machine learning and there is a need to improve their performance. This paper presents FOXANN, a novel classification model that combines the recently developed Fox optimizer with ANN to solve ML problems. Fox optimizer replaces the backpropagation algorithm in ANN; optimizes synaptic weights; and achieves high classification accuracy with a minimum loss, improved model generalization, and interpretability. The performance of FOXANN is evaluated on three standard datasets: Iris Flower, Breast Cancer Wisconsin, and Wine. The results presented in this paper are derived from 100 epochs using 10-fold cross-validation, ensuring that all dataset samples are involved in both the training and validation stages. Moreover, the results show that FOXANN outperforms traditional ANN and logistic regression methods as well as other models proposed in the literature such as ABC-ANN, ABC-MNN, CROANN, and PSO-DNN, achieving a higher accuracy of 0.9969 and a lower validation loss of 0.0028. These results demonstrate that FOXANN is more effective than traditional methods and other proposed models across standard datasets. Thus, FOXANN effectively addresses the challenges in ML algorithms and improves classification performance.

Keywords: *Artificial neural network, Classification, FOX, Machine learning, Optimization*

1. Introduction

Machine learning (ML) consist of algorithms and techniques that aim to train machines (computers) to solve real-world problems, increase performance, increase production, enhance efficiency, and reduce errors caused by humans or traditional techniques [1]. Supervised learning is a subset of the ML field. It is termed *supervised* because the machine is provided with the inputs and outputs (target) during the training process. This type of training lets the algorithm know the relationships between the inputs and output to achieve optimal results in the prediction process when it has been fed with inputs only [2].

Artificial neural networks (ANNs) are considered the most used supervised classifiers and have solved problems effectively since they were developed [3]. Furthermore, ANNs simulate the human brain's work by modeling it mathematically; for example, it mimics the connections among neurons, the functions of neurons, and the memory of the neurons [4], [5]. Research is continuing to improve the field of machine learning in general and neural networks in particular because ANNs play an essential role in most machine learning algorithms and problems such as convolutional neural networks (CNNs), deep learning, transfer learning, natural language processing (NLP), and generative adversarial network (GAN) [6], [7].

Improving the neural network is necessary due to increases in data and its complexity, computer resources, cloud solutions, cybersecurity threats, and generative AI [8]. However, optimization is widely applied in ANN such as swarm algorithms or evolutionary algorithms, i.e., artificial bee colony (ABC), ant colony optimization (ACO), particle swarm optimization (PSO), genetic algorithms (GA), and differential evolution (EA). Moreover, some researchers have examined the tuning of ANN hyperparameters, such as learning rate, initial weight, momentum, and epochs, while others have attempted to choose the best structure for an ANN (i.e., the number of hidden layers and the size of the hidden layer) [9], [10].

UAV-Assisted Partial Co-Operative NOMA-Based Resource Allocation in CV2X and TinyML-Based Use Case Scenario

Garima Chopra, *Member, IEEE*, Shalli Rani, *Senior Member, IEEE*, Wattana Viriyasitavat, *Senior Member, IEEE*, Gaurav Dhiman, *Senior Member, IEEE*, Amandeep Kaur, *Member, IEEE*, and S. Vimal, *Senior Member, IEEE*

***Abstract*—The evolution of Internet of Vehicles (IoV) from Internet of Things (IoT) has revolutionized Smart cities, enabling vehicle communication for safety and traffic information dissemination. However, fulfilling time-sensitive applications like safety alerts via Cellular Vehicle-to-Everything (C-V2X) faces resource constraints. This study presents a nonorthogonal multiple access (NOMA)-based resource allocation for C-V2X in ultradense networks (UDNs). This article has also discussed the role of tiny machine learning (TinyML) in unmanned aerial vehicle (UAV) and it is demonstrated with use case scenario. Additionally, a generalized expression for scheduling time fraction is derived for the proposed scheme. The proposed framework optimizes power allocation, accommodating high-speed users and UAV scenarios to improve performance in obstructed regions. Numerical analysis demonstrates an approximate 85% throughput increase over conventional schemes, affirming the efficiency of the NOMA-based approach for enhanced C-V2X performance.**

***Index Terms*—Cellular vehicle to everything (C-V2X), Internet of Things (IoT), Internet of Vehicles (IoV), nonorthogonal multiple access (NOMA), resource allocation, tiny machine learning (TinyML), ultradense network (UDN), unmanned aerial vehicle (UAV).**

Manuscript received 2 December 2023; accepted 2 January 2024. Date of publication 9 January 2024; date of current version 7 June 2024. *(Corresponding author: Shalli Rani.)*

Garima Chopra and Shalli Rani are with the Chitkara University Institute of Engineering and Technology, Chitkara University, Rajpura 140401, Punjab, India (e-mail: garimachopra100@gmail.com; shallir79@gmail.com).

Wattana Viriyasitavat is with the Business Information Technology Division, Department of Statistics, Faculty of Commerce and Accountancy, Chulalongkorn University, Bangkok 10330, Thailand (e-mail: hardgolf@gmail.com).

Gaurav Dhiman is with the Department of Electrical and Computer Engineering, Lebanese American University, Byblos 135053, Lebanon, also with the Centre of Research Impact and Outreach, Chitkara University Institute of Engineering and Technology, Chitkara University, Rajpura 140401, Punjab, India, also with the University Centre for Research and Development, Department of Computer Science and Engineering, Chandigarh University, Mohali 140413, India, also with the Department of Computer Science and Engineering, Graphic Era Deemed to be University, Dehradun 248002, India, also with the Division of Research and Development, Lovely Professional University, Phagwara 144411, India, and also with the School of Sciences and Emerging Technologies, Jagat Guru Nanak Dev Punjab State Open University, Patiala 147001, India (e-mail: gdhiman0001@gmail.com).

Amandeep Kaur is with the Department of Computer Engineering, National Institute of Technology at Kurukshetra, Kurukshetra 136119, India (e-mail: er.aman68@yahoo.com).

S. Vimal is with the Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam 626117, Tamilnadu, India (e-mail: svimalphd@gmail.com).

Digital Object Identifier 10.1109/JIOT.2024.3351733

I. Introduction

VEHICLE-TO-EVERYTHING (V2X) communication is an important aspect of intelligent transportation systems (ITSs) and is aimed at improving road safety, traffic efficiency, and overall driving experience. Massive research is going on by industries and various organizations to enhance and improve the capabilities of vehicular and transportation infrastructure. V2X communications include V2I vehicle-to-infrastructure (V2I), vehicle-to-vehicle (V2V), and vehicle-to-pedestrian (V2P), and vehicle-to-network (V2N). The efficiency and safety of transportation systems can be boosted through V2X communications, including passenger infotainment, safety applications, and optimization of vehicular traffic. A wide variety of use cases are also supported by vehicular communications apart from the above-mentioned applications, such as forward collision warning, blind spot warning, finding empty spots in parking area/charging, advisory related to optimal speed (particularly on highways), curve speed warning, do not pass warning, vulnerable road warning, emergency vehicle alert, etc. [1].

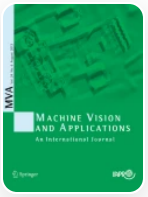
LTE and other cellular communication technologies offer extensive coverage, making them available in a wide range of locations. They also provide robust support for high-vehicle mobility and can handle large numbers of vehicles within a cell. Additionally, the implementation of device-to-device (D2D) communications has further enhanced spectrum utilization efficiency and system capacity in cellular systems [2], [3], [4]. These advancements have motivated organizations like the 3rd generation partnership project (3GPP) to explore the feasibility of incorporating LTE for V2X communications [5]. Currently, 3GPP is actively engaged in developing V2X services based on cellular technology, to offer a diverse range of V2X services [6].

Due to diverse nature of the network with flexible infrastructure, it becomes difficult to establish a Line-of-Sight (LoS) connections with each and every device in C-V2X, leading to coverage loss. Therefore, to overcome the hurdles imparted with dynamic conditions, unmanned aerial vehicle (UAV) are being used for the proposed work to reduce the congestion, improve Quality-of-Service (QoS), and coverage loss, especially for smart cities. While UAVs have greatly helped in enhancing the throughput, improve connectivity for

A novel key point based ROI segmentation and image captioning using guidance information

RESEARCH Published: 12 September 2024

Volume 35, article number 127, (2024) Cite this article



Machine Vision and Applications

Aims and scope

Submit manuscript

Jothi Lakshmi Selvakani, Bhuvaneshwari Ranganathan & Geetha Palanisamy

Abstract

Recently, image captioning has become an intriguing task that has attracted many researchers. This paper proposes a novel keypoint-based segmentation algorithm for extracting regions of interest (ROI) and an image captioning model guided by this information to generate more accurate image captions. The Difference of Gaussian (DoG) is used to identify keypoints. A novel ROI segmentation algorithm then utilizes these keypoints to extract the ROI. Features of the ROI are extracted, and the text features of related images are merged into a common semantic space using canonical correlation analysis (CCA) to produce the guiding information. The text features are constructed using a Bag of Words (BoW) model. Based on the guiding information and the entire image features,

Expert Systems / Early View / e13574

ORIGINAL ARTICLE

Artificial intelligence-enabled smart city management using multi-objective optimization strategies

Pinki, Rakesh Kumar, S. Vimal, Norah Saleh Alghamdi, Gaurav Dhiman, Subbulakshmi Pasupathi, Aarna Sood, Wattana Viriyasitavat, Assadaporn Sapsomboon, Amandeep Kaur

First published: 15 March 2024
https://doi.org/10.1111/exsy.13574

Abstract

This article outlines an integrated strategy that combines fuzzy multi-objective programming and a multi-criteria decision-making framework to achieve a number of transportation system management-related objectives. To rank fleet cars using various criteria enhancement, the Fuzzy technique for order of preference by resemblance to optimum solution are initially integrated. We then offer a novel Multi-Objective Possibilistic Linear Programming (MOPLP) model, based on the rankings of the vehicles, to determine the number of vehicles chosen for the work while taking into consideration the constraints placed on them. The search for optimal solutions to MOPs has benefited from the decades-long development of classical optimisation techniques. As a result of its potential for use in the real world, multi-objective optimisation (MOO) under uncertainty has gained traction in recent years. Recently, fuzzy set theory has been used to solve challenges in multi-objective linear programming. In this paper, we present a method for solving MOPs that makes use of both linear and non-linear membership functions to maximize user happiness. A hypothetical case study of transportation issue is taken here. This innovative approach improves management for the betterment of transportation networks in smart cities. The method is a more robust and versatile approach to the complex difficulties of contemporary urban transportation because it incorporates the TOPSIS method for vehicle ranking and then using Distance Operator and variable Membership Functions in fuzzy goal programming operation on the selected vehicles. The results provide valuable insights into the strengths and limitations

https://africanjournalofbiomedicalresearch.com/index.php/AJBR
Afr. J. Biomed. Res. Vol. 27(3s) (October 2024); 4405-4412
Research Article

Enhanced Solar Plant Positioning Using Moth-Flame Optimization Technique

Dr.E.Mariappan[1*],Mr.D.Asir[2], Dr.T.Jasperline[3] , Dr.P.Elamparithi[4], Dr.A.Jegadeesh[5], Dr.M.Kaliappan[6], Mr.M.Ramnath[7], Mrs.R.Angel Hepzibah[8]

[1*]Associate Professor/AI&DS, Ramco Institute of Technology, Virudhunagar, India
[2]Assistant Professor/CSE, Kamaraj College of Engineering and Technology, Virudhunagar, India
[3]Professor/CSE, Dr.G.U.Pope College of Engineering, Thoothukudi .India
[4]Associate Professor/AI&DS, Ramco Institute of Technology, Virudhunagar, India
[5]Associate Professor/ CSE, Muthayammal Engineering College, Rasipuram, Coimbatore
[6]Professor/AIDS, Ramco Institute of Technology, Virudhunagar District
[7]Assistant Professor/AIDS, Ramco Institute of Technology, Virudhunagar District
[8]Assistant Professor/AIDS, Ramco Institute of Technology, Virudhunagar District

***Corresponding author:** Dr.E.Mariappan
*Associate Professor/AI&DS, Ramco Institute of Technology, Virudhunagar, India

Abstract
This paper gives optimal placement of solar power plantin IEEE 69-bus_e system_e for voltage stability. The recitationlearning of PV_E iscarried out in IEEE 69-bus_e testsystem_efor the development of voltage_e stability through MATPOWER.When a power device is going through unexpected loading, its balance is affected. It needs reimbursement to improve the steadiness from the disorders. Here, the machine is analyzed by using CPF to enhance the steadiness. Various operating situations like withoutPV_E,with PV system using PSO and with placement ofPV_E (by using Mothflame algorithm) are used to evaluate the overall recital of the suggestedsystem_e. The results show that the device with PV_E (tuned with the aid of Mothflame) displays top result than the device without PV_E and With PV system placement by PSO.

Keywords—PV cell, MATPOWER, voltagestability,CPF, Mothflame algorithm, PSO.

***Author for correspondence*:**

Received; 12/10/2024 *Accepted: 18/10/2024*

DOI: https://doi.org/10.53555/AJBR.v27i3S.2845

I. INTRODUCTION

Rejuvenationfashions a fresh trend in the world. Freshskillsease the rate of the system_e and bounce more features in systems. It is being all grounds. In Power system_e, fresh skills spreadanuprisingupdating it.Photo volt photovoltaicare the up-to-devices which are rethatd in many aspects like power quality, stability.In this paper, voltage_e stability of a multi apparatussystem_e is scrutinized by applyingPV_Etheto cell.The proficiency of the device is advanced whilst it use usesPV_E mobile. The foremost gain of the PV_E cell is their brief response to

https://africanjournalofbiomedicalresearch.com/index.php/AJBR
Afr. J. Biomed. Res. Vol. 27(3s) (October 2024); 4458 – 4468
Research Article

Heart Disease Prediction: A Machine Learning Model For Evaluation And Hyperparameter Tuning

Dr. A. Anna Lakshmi[1], Karpagavalli C[2], Saravanan T[3], Logapriya V[4], Blessing karunya T[5], Twinkle Geojini G[6], Dr. Mariappan E[7] and Ramnath M[8*]

[1]Department of Information Technology, R.M.K Engineering College, Chennai, Tamil Nadu, India.
[2,4,7,8]Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, Tamil Nadu, India.
[3,5]Department of Information Technology, PSR Engineering College, Virudhunagar, Tamil Nadu, India.
[6]Department of Computer Science and Engineering, Thamirabharani Engineering College, Tirunelveli, Tamil Nadu, India.

***Corresponding Author:** Ramnath M
*E-mail: ramnath25@gmail.com, ORCID ID: 0000-0002-9397-9320

Corresponding Author:

Ramnath M received B.E. degree in Information Technology from Francis Xavier Engineering College, Tamil Nadu, India in 2009 and M.E. degree in Network Engineering from Vel Tech Multi Tech Engineering College, Tamil Nadu, India in 2011. He is currently pursuing Ph.D. at the Department of Information and Communication Engineering, Anna University, Chennai, India. He is working as an Assistant professor in Department of Artificial Intelligence and Data Science at Ramco Institute of Technology, Tamil Nadu, India. He is a life time member of International Association of Engineers (IAENG) and Institute for Educational Research and Publication (FERP).

Abstract:
World Health Organization reported that heart diseases are the prominent cause of casualty and also increase year by year. Timely treatment increases the possibility of cure. For this, earlier prediction and accurate diagnosis are essential. Because of today's technological advancements, prediction with more accuracy and precision is possible. Machine learning (ML) algorithms attract the attention of researchers in prediction modelling due to the accuracy, precision, and reliability of prediction. Hence, in this research an attempt is made to predict the heart diseases using ML algorithms for instance, Logistic Regression (LR), Decision Tree (DT), Random Forest (RF), and Support Vector Machine (SVM). For the research, the heart diseases with 11 parameters and 4 different types of heart diseases especially (TA: Typical Angina; ATA: Atypical Angina; NAP: Non-Anginal Pain, ASY: Asymptonic) are considered and the prediction is done by using the aforementioned Machine Learning algorithms. Finally, the results are compared, and concluded that RF and SVM produce better prediction results.

Keywords: Heart Disease Prediction, Machine Learning, Hyperparameter Tuning, Machine learning (ML), Logistic Regression (LR), Decision Tree (DT), Random Forest (RF), Support Vector Machine (SVM)

***Author for correspondence: Email:** *ramnath25@gmail.com*

Received: 17/10/2024 *Accepted: 22/10/2024*

DOI: https://doi.org/10.53555/AJBR.v27i3S.2891

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online):0493-2137
E-Publication: Online Open Access
Vol: 57 Issue: 10:2024
DOI: 10.5281/zenodo.14038149

AN EXAMINING CLUSTER BEHAVIOUR ANALYTICALLY USING K-MEANS, EM, AND K* MEANS ALGORITHM

Dr. MARRIAPPAN E
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, Tamilnadu, India. Email: mapcse.e@gmail.com

Dr. ANNA LAKSHMI A
Department of Information Technology, RMK Engineering College, Chennai, Tamilnadu, India.
Email: annalaxmi.raj@gmail.com

AMALA PRINCETON X
Department of Computer Science and Engineering, VV College of Engineering, Tirunelveli, Tamilnadu, India. Email: princecardoza@gmail.com

VETRIVEL P
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, Tamilnadu, India. Email: vetrivel@ritrjpm.ac.in

Dr. RAMASAMY S
Department of Mechanical Engineering, St. Mother Theresa Engineering College, Tuticorin, Tamilnadu, India. Email: ramasamy@mtec.ac.in

ANGEL HEPHZIBAH R
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, Tamilnadu, India. Email: angelhepzibah@ritrjpm.ac.in

Dr. KALIAPPAN M
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, Tamilnadu, India. Email: kalsrajan@yahoo.co.in

RAMNATH M
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, Tamilnadu, India. Email: ramnath25@gmail.com

Abstract

An essential component of an intelligent data analysis process is clustering, an unsupervised learning technique. By grouping the patterns into homogeneous clusters, it facilitates the investigation of the links between the patterns. In the realm of information retrieval(IR), clustering has been dynamically applied to arrange of applications. One of the most active areas of study and development nowadays is clustering. By using clustering, one can find the set of significant groups in which members are more linked to each other than to members of other groups. There salting groupings can offer a framework for arranging length by text sections to make browsing and searching easier. Numerous clustering techniques have been thoroughly examined in relation to the clustering problem. Expectation Maximization(EM) and its variations, as well as the well-known link-means algorithm, are examples of iterative optimization clustering algorithms that have been shown to perform rather well for clustering. These algorithms are still among the most popular and effective. In the heart spect dataset, which has the following features: purity, entropy, CPU time, cluster-wise analysis, mean value analysis, and inter-cluster distance, this study examines the partition method clustering approaches, EM, Kmeans and K*Means algorithm. In order to support the

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online):0493-2137
E-Publication: Online Open Access
Vol: 57 Issue: 11:2024
DOI: 10.5281/zenodo.14043365

LDPC CODE BASED AUTOENCODER OF AWSN USING DEEP NEURAL NETWORKS MODEL FOR WIRELESS COMMUNICATION CHANNEL

VAISSNAVE V
Department of Computational Intelligence, SRM Institute of Science and Technology, Kattankulathur, India.
Email: Vaissnave@gmail.com

AMUTHACHENTHIRU K
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Virudhunagar, India.
Email: kamuthachenthiru@gmail.com

DURGA DEVI G
Department of Computer Science and Engineering, Thamirabharani Engineering College, Tirunelveli, India.
Emai: ldurgaaganesan@gmail.com

Dr. ANNA LAKSHMI A
Department of Information Technology, RMK Engineering College, Chennai, India.
Email: annalaxmi.raj@gmail.com

Dr. JENIFER JOHN J
Assistant Professor, Department of Electronics and Communication Engineering, Jayaraj Annapackiam CSI College of Engineering, Nazareth, Tamilnadu. Email: johnjjesun@gmail.com

RAMNATH M
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Virudhunagar, India.
Email: ramnath25@gmail.com, ORCID ID: 0000-0002-9397-9320

Dr. MARIAPPAN E
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Virudhunagar, India.
Email: mapcse.e81@gmail.com

Abstract

A wireless communication system employs a variety of data compression, encoding, and modulation techniques to efficiently transmit messages via communication channels, aiming to reproduce the information at the receiver with the fewest possible errors. To counteract the impact of noise and interference encountered by the signal during its journey through the communication channel, the channel encoder introduces redundancy to the binary information sequence. The channel decoder at the receiver utilizes this redundancy to combat errors. To enhance data redundancy, the channel encoder utilizes error-correcting codes, including block codes, convolutional codes, Low-Density Parity Check (LDPC) codes, and turbo codes. These coding methods play a crucial role in error detection and correction. However, the configuration of a wireless communication system can now be simplified by leveraging Deep Neural Networks (DNNs). This streamlined communication system can be conceptualized as a specific type of autoencoder in the realm of Deep Learning (DL). The primary goal of this research is to develop an autoencoder model for Additive White Gaussian Noise (AWGN) and fading channels with a low error probability, ensuring reliable communication.

Keywords: Compression, Interference, Low-Density Parity Check (LDPC), Deep Neural Networks (DNNs), Additive White Gaussian Noise (AWGN).

International Journal of Science, Mathematics and Technology Learning
ISSN: 2327-7971 (Print) ISSN: 2327-915X (Online)
Volume 32 No. 2, 2024

Dragonfly Algorithm-Based Approach for Solar Power Plant Optimization in IEEE 69-Bus Network

Angel Hepzibah R.[1], Anna Lakshmi A.[2], Mariappan E.[3], Kaliappan M.[4], Sugel Anandh O.[5], Amala Princeton X.[6], Ramnath M.[7], Karpagavalli C.[8]

[1,7,8]Assistant Professor, AI & DS, RAMCO Institute of Technology, Rajapalayam, Virudhunagar, Tamil Nadu, India

[2]Associate Professor, IT, MK Engineering College, Kavaraipettai, Thiruvalluvar, Tamil Nadu, India

[3,5]Associate Professor, AI & DS, RAMCO Institute of Technology, Rajapalayam, Virudhunagar, Tamil Nadu, India

[4]Professor, AI & DS, RAMCO Institute of Technology, Rajapalayam, Virudhunagar, Tamil Nadu, India

[6]Assistant Professor, CSE, VV College of Engineering, Thisayanvilai, Tirunelveli, Tamil Nadu, India

Abstract

This paper gives optimal placement of solar power plant in IEEE 69-bus_e system_e for voltage stability. The recitation learning of PV_E is carried out in IEEE 69-bus_e test system_e for the development of voltage_e stability through MATPOWER. When a power device is going through unexpected loading, its balance is affected. It needs reimbursement to improve the steadiness from the disorders. Here, the machine is analyzed by using CPF to enhance the steadiness. Various operating situations like without PV_E,with PV system using PSO and with placement of PV_E (by using Dragonfly algorithm) are used to evaluate

[1]Corresponding Author, email: rangelhepzibah@gmail.com

Acceptance: 08 November 2024, Publication: 09 November 2024.
[2]Second Author, email: annalaxmi.raj@gmail.com
[3]Third Author, email: kalsrajan@yahoo.co.in
[4]Fourth Author, email: ramnath25@gmail.com
[5]Fifth Author, email: drsugel@gmail.com
[6]Sixth Author, email: mapcse.e81@gmail.com
[7]Seventh Author, email: kalsrajan@yahoo.co.in
[8]Eighth Author, email: karpagavalli@gmail.com
DOI: https://doi.org/10.5281/zenodo.14058771

PeerJ Computer Science

Enhancing AppAuthentix recommender systems using advanced machine learning techniques to identify genuine and counterfeit android applications

Ramnath M.[1] and Yesubai Rubavathi C.[2]

[1] Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, Tamil Nadu, India
[2] Department of Computer Science and Engineering, Saveetha Engineering College, Thandalam, Chennai, Tamil Nadu, India

ABSTRACT

Smartphone app expansion needs strict security measures to avoid fraud and danger. This study overcomes this issue by identifying apps differently. This new solution uses convolutional neural network (CNN), natural language processing (NLP), and the strong AppAuthentix Recommender algorithm to secure app stores and boost customer confidence in the digital marketplace. Since the app ecosystem has grown, counterfeit and harmful applications have risen, threatening consumers and app merchants. These risks need advanced technology that can distinguish malware from legitimate apps. A complex prediction model using CNNs for image analysis, NLP for text feature extraction, and the novel AppAuthentix Recommender algorithm to properly identify legitimate and counterfeit mobile applications is the goal of this research. The whole strategy secures app stores and authenticates apps. The urgent need to safeguard app markets and users against unauthorized and hazardous programs sparked this study. Our cutting-edge solutions make mobile app consumers' digital lives safer and app marketplaces more trustworthy. CNN, NLP, and AppAuthentix Recommender yielded amazing results in this investigation. Mobile app authenticity may be estimated with 98.25% accuracy. This technology greatly improves app store security and enables mobile app verification. In conclusion, our work offers a novel way to app identification at a time of rapid mobile app development. CNN, NLP, and AppAuthentix Recommender have dramatically enhanced app store security. These new solutions may boost mobile app security and consumer confidence.

Subjects Data Mining and Machine Learning, Mobile and Ubiquitous Computing, Security and Privacy

Keywords AppAuthentix recommender, App identification, Convolutional Neural Networks (CNN), Counterfeit apps, Mobile applications, Natural Language Processing (NLP)

Submitted 7 May 2024
Accepted 23 October 2024
Published 20 November 2024

Corresponding author
Ramnath M., ramnath25@gmail.com

Academic editor
Leandros Maglaras

Additional Information and Declarations can be found on page 39

DOI **10.7717/peerj-cs.2515**

INTRODUCTION

Within the swiftly growing realm of mobile apps, people frequently depend on reviews of apps to make well-informed choices regarding acquiring and utilizing an app. The evaluations, which contain valuable consumer feedback and opinions, provide a wealth of data that may be utilized to enhance app recommendations. At the same time, the

ADVANCED WASTEWATER TREATMENT USING ENERGY -- EFFICIENT FENTON PROCESS OPTIMISED WITH DEEP LEARNING

Journal: Oxidation Communications 47(4) (2024) Pages: 828 - 836

▼ Authors

KARPAGAVALLI, C.; SRI HARSHA, ARIGELA ; MAHADEVAN, NANDHINI ; RACHEL, P. PRIYA ; KATHIR, I.; KISTAN, A.; JANANI, M.; PHILIP, JIM MATHEW ; RAJARAM, A.

▼ Abstract

The Fenton process has emerged as a treatment of choice for advanced wastewater treatment due to its high oxidative power, which makes it capable of degrading a large number of organic pollutants. However, the conventional Fenton process as discussed earlier is associated with drawbacks such as high energy demand, excessive usage of reagents, and other operational difficulties. This study is meant to respond to these issues by designing an energy-efficient Fenton process enhanced deep learning. As the work mainly bases its analysis on historical operation data, the research aims at developing a model that can be used in real-time control and optimisation of parameters like pH, iron catalyst dosage, and hydrogen peroxide concentration. Through the use of deep learning the adjustment of the process is carried out in real time which brings about a considerable increase in energy efficiency as well as pollutant removal rates. The study uses an experimental data-based convolutional neural network (CNN), and the data collected from industrial wastewater treatment plants. Presented models are employed to optimise the Fenton process regarding the consuming energy with high values of contaminant degradability. Products of the process are a 20{\%} cut in energy use and a better ability to remove organics by 90{\%} inclusive of dyes and pharmaceuticals. Thus, the present work augments the efficiency and profitability of the Fenton process itself while addressing the need to promote environmentally friendly wastewater disposal methods. Thus, the conclusions of this study reveal the promise of coupling deep learning with advanced oxidation processes.

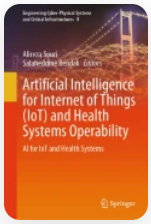
▼ Keywords

Convolutional neural network (CNN); Deep; advanced wastewater treatment; contaminant removal; energy-efficient Fenton process; hydroxyl radicals; industrial wastewater.; learning optimisation; wastewater treatment optimisation

Benign and Malignant Cancer Prediction Using Deep Learning and Generating Pathologist Diagnostic Report

| Conference paper | First Online: 01 February 2024

| pp 73–87 | Cite this conference paper



Artificial Intelligence for Internet of Things (IoT) and Health Systems Operability

(IoTHIC 2023)

Kaliappan Madasamy, Vimal Shanmuganathan, Nithish, Vishakan, Vijayabhaskar, Muthukumar, Balamurali Ramakrishnan & M. Ramnath

Part of the book series: Engineering Cyber-Physical Systems and Critical Infrastructures ((ECPSCI,volume 8))

Included in the following conference series: International Conference on IoT and Health

Incorporating Transfer Learning in Engine Health Assessment for Accurate Remaining Useful Life Prediction

Publisher: IEEE Cite This PDF

C. Karpagavalli ; Nelson A ; R. Raja ; Saranya E ; Manzoore Elahi M. Soudagar ; Christu Paul Ramaian **All Authors**

Abstract:
Aircraft engines are critical, therefore any move to make them safer, more reliable, and fuel-efficient is highly encouraged. To solve the challenges of flight safety and maintenance expense during aircraft engine operation, a prognostics and health management system is deployed. This system is primarily concerned with flaw detection, health evaluation, and life prediction. Making decisions about aircraft engine operation and maintenance is strongly reliant on estimating the remaining useful life (RUL). This study provides an ensemble transfer learning model for RUL prediction using the C-MAPSS turbofan engine dataset. Pre-processing procedures such as filtering and normalization are used to improve the dataset. The proposed ensemble model for RUL prediction is then trained on the processed data. Some of the well-known transfer learning models that are compared include Xception, ResNet-50, and VGG-16. The ensemble model outperforms the other models, with the highest R2 value of 0.9901. Furthermore, the ensemble model is very effective; it can predict RUL in just 37 seconds, which suggests that it could be useful for keeping an eye on engine health and making decisions about aircraft.

Published in: 2024 3rd International Conference on Sentiment Analysis and Deep Learning (ICSADL)

Date of Conference: 13-14 March 2024

DOI: 10.1109/ICSADL61749.2024.00081

Date Added to IEEE *Xplore*: 25 July 2024

Publisher: IEEE

ISBN Information:

Conference Location: Bhimdatta, Nepal

Development of Advanced Noise Filtering Techniques for Medical Image Enhancement

Publisher: IEEE

Sumit Kushwaha ; K. Amuthachenthiru ; Geetha. K ; Jonnadula Narasimharao ; Dileep Kumar M ; Sai Sudha Gadde **All Authors**

Abstract:
Medical imaging modalities, including computed tomography (CT), magnetic resonance imaging (MRI), X-rays, and ultrasound, are extensively employed in the healthcare industry for diagnostic purposes. Noise, on the other hand, can disturb these approaches and lead to inaccurate diagnosis. Due to this problem, the significance of noise removal technologies has grown in the field of medical imaging, specifically for the examination and understanding of medical images and anatomical structures. To tackle these challenges, a variety of denoising techniques have been developed, such as the Weiner filter (WF), Gaussian filter, and median filter. This work employs a Deep Learning (DL) method known as Convolutional Autoencoder (CAE) to remove noise from medical images. We gather chest X-ray images for analysis and focus on common noise types that affect medical images, such as Poisson and Gaussian noise. We evaluate the effectiveness of the suggested denoising method CAE by comparing it to the commonly employed WF methodology. The Structural Similarity Index (SSIM) and Peak Signal-to-Noise Ratio (PSNR) are employed to assess and compare the performance of the WF and CAE in reducing Poisson and Gaussian noise. The study's findings indicate that the suggested denoising method based on CAE shows promising results in terms of improving quality.

Published in: 2024 5th International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV)

Date of Conference: 11-12 March 2024

DOI: 10.1109/ICICV62344.2024.00149

Date Added to IEEE *Xplore*: 07 May 2024

Publisher: IEEE

ISBN Information:

Conference Location: Tirunelveli, India

Lung Cancer Detection in CT Images Using Deep Learning Techniques: A Survey Review

C Usharani
Ramco Institute of Technology

B Revathi
Ramco Institute of Technology

A Selvapandian
PSNA College of Engineering and Technology

S K Kezial Elizabeth
Mangayarkarasi College of Engineering

DOI: https://doi.org/10.4108/eetpht.10.5265

Keywords: Computed Tomography, Lung cancer, Machine Learning, Deep Learning, image processing

Abstract

INTRODUCTION: The Computed Tomography (CT) imaging-based Lung cancer detection is crucial for early diagnosis. This survey paper presents an overview of the techniques and advancements in CT-based lung cancer detection. It covers the fundamentals of CT imaging, including principles, types, and protocols.

OBJECTIVES: The paper explores image processing techniques for pre-processing, such as noise reduction, enhancement, and segmentation.

METHODS: Additionally, it discusses feature extraction methods, including shape, texture, and intensity-based features, as well as Deep Learning (DL) and Machine Learning (ML) methods for automated classification.

RESULTS: Computerised systems and their integration is examined with CT imaging along with performance evaluation metrics. The survey concludes by addressing challenges, limitations, and future directions. The imaging modalities and artificial intelligence techniques are used to improve lung cancer detection.

Deep Learning-Based EEG Signal Classification of Epileptic Patients

Publisher: IEEE Cite This PDF

V. Senthil Kumar ; C. Karpagavalli ; S. Pradeep ; S. Divya ; Syed Noeman Taqui ; Nadanakumar Vinayagam **All Authors**

Abstract:
Epilepsy is a neurological disorder characterized by repeated seizures throughout the day. Epilepsy affects around 65 million people worldwide. For people with focal epilepsy, surgery is a possibility but medicine is the standard treatment for generalized epilepsy. Unfortunately, these medications fail to control epileptic seizures in more than 30% of patients. Yet, this ends up in accidents and significantly shortens the patient's life expectancy. An electroencephalogram (EEG) is a critical diagnostic tool for epilepsy. The conventional method for detecting epileptic activity is expert human interpretation of multi-channel EEG readings. This is a complex and time-consuming procedure, thus many researchers have tried to automate it using Machine Learning (ML) and Deep Learning (DL) methods. Unfortunately, the investigation did not produce satisfactory results. This study aims to fill this research gap by proposing a new CNN-BLSTM (Convolutional Neural Network-Bidirectional Long Short-Term Memory) based hybrid DL model for epileptic detection. The EEG data from Kaggle was collected and processed. This study uses the same amount of data and epochs for training, validation, and testing all four DL models such as AlexNet, VGG-16, InceptionV3, and the proposed model. According to the experiment findings, the proposed model has a better level of accuracy (98.37%) than the other three models.

Published in: 2024 International Conference on Expert Clouds and Applications (ICOECA)

Date of Conference: 18-19 April 2024

DOI: 10.1109/ICOECA62351.2024.00114

Date Added to IEEE *Xplore*: 05 August 2024

Publisher: IEEE

ISBN Information:

Conference Location: Bengaluru, India

Deep Learning Classification Techniques on Detecting Diabetic Retinopathy Dataset

Publisher: IEEE

B. Revathi ; C. Usharani ; S. K. Kezial Elizabeth ; Nagaraj P ; D. Nithya **All Authors**

Abstract:
Deep learning algorithms can summarize images to understand how to carry out necessary tasks. The purpose of this study is to compare several deep learning methods. Both experience-based and explanation-based learning are possible in deep learning. The most widely utilized algorithms, such as Convolutional Neural Networks (CNN), Multilayer Perceptron (MLP), Generative Adversarial Networks (GAN), Radial Basis Function Networks (RBFN), and Deep Belief Networks (DBN), and the Diabetic Retinopathy dataset is utilized in this study to evaluate the effectiveness of the algorithms. A comparative study of the classifiers reveals that CNN performs more accurately than the other approaches.

Published in: 2024 International Conference on Inventive Computation Technologies (ICICT)

Date of Conference: 24-26 April 2024

DOI: 10.1109/ICICT60155.2024.10544960

Date Added to IEEE *Xplore*: 07 June 2024

Publisher: IEEE

ISBN Information:

Conference Location: Lalitpur, Nepal

ISSN Information:

Advancing Brain-Computer Interaction: EEG-based Eye Movement Recognition with AI

Publisher: IEEE

Ravi Kumar Saidala ; M. Ramnath ; Komala C R ; N. Gowri Vidhya ; Syed Noeman Taqui ; Rajendiran M **All Authors**

Abstract:
The integration of Electroencephalography (EEG) and Brain-Computer Interface (BCI) technologies is causing an evolution in healthcare, accessibility, and neuroscience. This multidisciplinary method offers a non-invasive means to communicate and control through intentional eye movements, which is particularly promising for patients suffering from neurological illnesses. In this study, eye movements are identified using EEG data from the EPOC Flex wireless EEG brain device. Using advanced Deep Learning models such as the Deep Belief Network (DBN) and the Deep Residual Network (Deep ResNet), and attempted to distinguish four distinct eye movements: open, close, right, and left. Some of the primary metrics utilized for assessing these models were accuracy, precision, recall, and F1 score. The Deep ResNet model gives better results with an accuracy of 96.25%, recall of 95.85%, precision of 96.66%, and an F1 score of 96.24%. The findings suggest that BCI frameworks can leverage EEG-based eye movement detection to improve rehabilitation procedures and make computers and devices easier to operate. This study's findings open a path for future research into neurotechnological applications and human-computer interaction.

Published in: 2024 International Conference on Inventive Computation Technologies (ICICT)

Date of Conference: 24-26 April 2024

DOI: 10.1109/ICICT60155.2024.10544675

Date Added to IEEE *Xplore*: 07 June 2024

Publisher: IEEE

ISBN Information:

Conference Location: Lalitpur, Nepal

ISSN Information:

Exploration of Key components in wireless sensor networks utilizing Artificial Intelligence and virtualized security

Purushothaman Ramaiah (https://sciprofiles.com/profile/4100325) [*1],
Elamparithi Pandian (https://sciprofiles.com/profile/3547886) [2],
Chinnasamy Ponnusamy (https://sciprofiles.com/profile/1929940) [3], Divya Priya Degala [4],
Balambigai Subramanian (https://sciprofiles.com/profile/1112723) [5],
Manjunathan Alagarsamy (https://sciprofiles.com/profile/2616616) [6]

[1] Department of Electronics and Communication Engineering, J.J. College of Engineering and Technology, Trichy-620009, TamilNadu, India

[2] Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam – 626117, Tamil Nadu, India

[3] Department of Computer Science and Engineering, School of Computing, Kalasalingam Academy of Research and Education, Srivilliputtur, Tamil Nadu, India

[4] Department of Computer Science Engineering, MLR Institute of Technology, Hyderabad, India

[5] Department of Electronics and Communication Engineering, Karpagam College of Engineering, Coimbatore – 641032, Tamil Nadu, India

[6] De nt of Electronics and Communication Engineering, K.Ramakrishnan College of Technology, Trichy – 621 112, Tami , India

Academic Editor: Eugenio Vocaturo

Data Science in the Medical Field
2025, Pages 83-97

Chapter 7 - A knowledge discovery framework for COVID-19 disease from PubMed abstract using association rule hypergraph

Pradeepa Sampath [1], Vimal Shanmuganathan [2], Janmenjoy Nayak [3], Subbulakshmi Pasupathi [4], Prasun Chakrabarti [5], Kaliappan Madasamy [6]

Show more

https://doi.org/10.1016/B978-0-443-24028-7.00008-8 ↗

Abstract

Coronavirus disease 2019 (COVID-19) infects the human being through ACE2 receptors. About 66,94,59,397 humans worldwide had been affected with coronavirus until January 2023. This chapter mainly focuses to extract trends and their association related to the COVID-19 from PubMed documents. The association rule hypergraph is proposed to identify the multiway relationship between genes, side effects, and proteins in PubMed connected to COVID-19 disorders. The words in the abstract that have been preprocessed using Natural Language ToolKit (NLTK) are considered to be vertices in the construction of the hypergraph, which uses the abstract as an edge. Association Rule Mining algorithm is applied on the hypergraph, and the association between the terms is identified. It detects the effective keynotes about the COVID-19 with proper support. Our substructure enabled us to track the evolution of trends in COVID-19 research and the important in demand areas of interest (hotspots) on the pandemic.

Volume 3, Book 10, 2024, IIP Series

Futuristic Trends in

Artificial Intelligence

Iterative International Publishers
IIP

Futuristic Trends in

ARTIFICIAL INTELLIGENCE

Volume 3, Book 10, 2024, IIP Series

MACHINE LEARNING AND DEEP LEARNING REAL TIME APPLICATIONS

Abstract

Machine learning is a current hot topic in the modern computer world and is a branch of artificial intelligence. Many researchers have contributed their work in this field to enhancing the accuracy and intelligence of machine learning approaches. Learning is a process to create a new concept, which is used in machines too. In addition, another deep learning notion begins to play a significant role. A branch of machine learning called deep learning (DL) uses neural networks and is utilized for many real-time applications owing to its automatic learning strategy. This chapter presents an overview of machine and deep learning approaches and their real-time applications.

Keywords: Machine learning, deep learning, real time applications, and artificial intelligence.

Authors

C. Karpagavalli
Assistant Professor
Department of Artificial Intelligence and Data Science
Ramco Institute of Technology
Rajapalayam. Tamil Nadu, India.
ckvalli08@gmail.com

Dr. M. Kaliappan
Professor
Department of Artificial Intelligence and Data Science
Ramco Institute of Technology
Rajapalayam, Tamil Nadu, India.
kalsrajan@yahoo.co.in

MACHINE LEARNING AND DEEP LEARNING APPLICATIONS

Abstract

Machine learning and deep learning techniques have revolutionized various domains by enabling intelligent decision-making, pattern recognition, and complex data analysis. This comprehensive survey explores the diverse range of applications where these techniques have been successfully employed. We present an overview of machine learning algorithms and deep neural network architectures, highlighting their strengths and limitations. The survey encompasses applications in computer vision, natural language processing, healthcare, finance, robotics, and more. By discussing real-world case studies, we demonstrate how machine learning and deep learning have contributed to advancements in autonomous vehicles, medical diagnosis, fraud detection, sentiment analysis, and human-robot interaction. We also delve into challenges such as interpretability, data privacy, and model generalization that arise in deploying these technologies. The survey concludes by discussing emerging trends, research directions, and ethical considerations in the rapidly evolving landscape of machine learning and deep learning applications.

Keywords: Machine Learning, Deep Learning, Applications, Computer Vision, Natural Language Processing, Healthcare, Finance, Robotics, Autonomous Vehicles, Medical Diagnosis, Fraud Detection, Sentiment Analysis, Human-Robot Interaction, Interpretability, Data Privacy, Model Generalization, Ethical Considerations.

Authors

Ms. K. Amuthachenthiru
Assistant Professor
Department of Artificial Intelligence
Ramco Institute of Technology
Rajapalayam.Tamil Nadu, India.
amuthachenthiru@ritrjpm.ac.in

Dr. M. Kaliappan
Professor & Head
Department of Artificial Intelligence
Ramco Institute of Technology
Rajapalayam.Tamil Nadu, India.
kaliappan@ritrjpm.ac.in

Dr. S. Vimal
Associate Professor,
Department of Artificial Intelligence
Ramco Institute of Technology,
Rajapalayam.Tamil Nadu, India.
vimal@ritrjpm.ac.in

STUDY OF PERSONAL REVIEWS OF MOBILE USERS

Abstract

Users are now able to provide feedback on a wide range of service providers at any time, thanks to the proliferation of mobile apps for internet-connected devices. Nonetheless, sadly, to date, only a small number of classification technique researches have been implemented in this field. In this article, we analyzed more than 1,400,000 evaluations of actual mobile apps and found the following distinguishing features: There is a significant polarity difference, a short average length, a large length span, a power-law distribution, and a power-law distribution. Several studies have compared various emotion categorization algorithms, feature representations, and review times based on the aforementioned criteria.

Keywords: service providers, mobile apps, short average length, large length span, power-law distribution.

Authors

Mr. M. Ramnath
Department of Artificial Intelligence and Data Science Ramco Institute of Technology Rajapalayam,
Tamil Nadu, India.
ramnath25@gmail.com

Dr. C. Yesubai Rubavathi
Department of Computer Science and EngineeringFrancis Xavier Engineering College, Tirunelveli
Tamil Nadu, India.
yesubairubavathi@francisxavier.ac.in

TEXT AND SOCIAL MEDIA ANALYTICS FOR FAKE NEWS AND HATE SPEECH DETECTION

Edited by Hemant Kumar Soni, Sanjiv Sharma, and G. R. Sinha

A **Chapman & Hall** Book

CRC Press
Taylor & Francis Group

Contents

Thirds-of-American-Adults-Get-News-from-Social-Media-Survey-IdUKKCN1BJ2A8.
Nasir, Jamal Abdul , Osama Subhani Khan , and Iraklis Varlamis . 2021. “Fake News Detection: A Hybrid CNN-RNN Based Deep Learning Approach.” International Journal of Information Management Data Insights 1 (1): 100007.
Pennington, Jeffrey , Richard Socher , and Christopher D. Manning . 2014. “Glove: Global Vectors for Word Representation.” Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP), 1532–1543.
Pérez-Rosas, Verónica , Bennett Kleinberg , Alexandra Lefevre , and Rada Mihalcea . 2017. “Automatic Detection of Fake News.” ArXiv Preprint ArXiv:1708.07104.
Rampersad, Giselle , and Turki Althiyabi . 2020. “Fake News: Acceptance by Demographics and Culture on Social Media.” Journal of Information Technology and Politics 17 (1): 1–11. https://doi.org/10.1080/19331681.2019.1686676.
Rubin, Victoria L. , Niall Conroy , Yimin Chen , and Sarah Cornwell . 2016. “Fake News or Truth? Using Satirical Cues to Detect Potentially Misleading News.” Proceedings of the Second Workshop on Computational Approaches to Deception Detection, 7–17.
Salem, Fatima K. , Roaa Al Feel Abu , Shady Elbassuoni , Mohamad Jaber , and May Farah . 2019. “Fa-Kes: A Fake News Dataset around the Syrian War.” Proceedings of the International AAAI Conference on Web and Social Media, Vol. 13, 573–582.
Shu, Kai , Amy Sliva , Suhang Wang , Jiliang Tang , and Huan Liu . 2017. “Fake News Detection on Social Media: A Data Mining Perspective.” ACM SIGKDD Explorations Newsletter, 19 (1): 22–36.
Sirikulviriya, Naphaporn , and Sukree Sinthupinyo . 2011. “Integration of Rules from a Random Forest.” International Conference on Information and Electronics Engineering, Vol. 6, 194–198.
Smitha, N. , and R. Bharath . 2020. “Performance Comparison of Machine Learning Classifiers for Fake News Detection.” 2020 Second International Conference on Inventive Research in Computing Applications (ICIRCA). IEEE, 696–700.
Thorne, James , Andreas Vlachos , Christos Christodoulopoulos , and Arpit Mittal . 2018. “Fever: A Large-Scale Dataset for Fact Extraction and Verification.” ArXiv Preprint ArXiv:1803.05355.
Vosoughi, Soroush , Deb Roy , and Sinan Aral . 2018. “The Spread of True and False News Online.” Science 359 (6380): 1146–1151.
Wang, W. Y. 2017. “Liar, Liar Pants on Fire: A New Benchmark Dataset for Fake News Detection.” ArXiv preprint ArXiv:1705.00648.
Wang, W. Y. 2021. “A New Benchmark Dataset for Fake News Detection.” Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics, Vol. 2 Association for Computational Linguistics.
Yazdi, Kasra Majbouri , Adel Majbouri Yazdi , Saeid Khodayi , Jingyu Hou , Wanlei Zhou , and Saeed Saedy . 2020. “Improving Fake News Detection Using K-Means and Support Vector Machine Approaches.” International Journal of Electronics and Communication Engineering 14 (2): 38–42.

Detection and Prevention of Fake News and Hate Speech through Machine Learning and Natural Language Processing

Selva Birunda, S. , and R. Kanniga Devi . “A review on word embedding techniques for text classification.” Innovative Data Communication Technologies and Application: Proceedings of ICIDCA 2020 (2021): 267–281. https://doi.org/10.1007/978-981-15-9651-3_23.
Selva Birunda, S. , and R. Kanniga Devi . “A novel score-based multi-source fake news detection using gradient boosting algorithm.” International Conference on Artificial Intelligence and Smart Systems (ICAIS), pp. 406–414. IEEE, 2021. https://doi.org/10.1109/ICAIS50930.2021.9395896.
Selva Birunda, S. , and R. Kanniga Devi . “Improving energy efficient aspect of spam classification framework using ensemble machine learning.” Solid State Technology 63, no. 5 (2020): 9032–9039.
Al-Dala'in, Thair , and Justin Hui San Zhao . “Overview of the benefits deep learning can provide against fake news, Cyberbullying and hate speech.” International Conference on

Chapter 3
AI's Role in 6G Security Machine Learning Solutions Unveiled

D. Vetrithangam
Department of Computer Science and Engineering, Chandigarh University, India

Komala C. R.
Department of Information Science and Engineering, HKBK College of Engineering, Bengaluru, India

D. Sugumar
https://orcid.org/0000-0001-9652-2062
Karunya Institute of Technology and Sciences (Deemed), Coimbatore, India

Y. Mallikarjuna Rao
Department of Electronics and Communication Engineering, Santhiram Engineering College, India

C. Karpagavalli
Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, India

B. Kiruthiga
https://orcid.org/0000-0001-5583-2232
Velammal College of Engineering and Technology, Madurai, India

ABSTRACT

The incorporation of Artificial Intelligence (AI) into 6G security measures and its revolutionary effect on the telecommunications industry are examined in this paper. We start off by talking about how important it is to integrate AI in order to strengthen overall security posture, improve network defenses, and address vulnerabilities. We clarify AI's critical role in promoting innovation and efficiency within the telecom industry by analyzing 6G network vulnerabilities and the importance of enhanced security measures. The use of AI for 6G security and its potential for threat detection, incident response, and network optimization through machine learning techniques.

INTRODUCTION

The emergence of 6G (Kirubasri, G. et al., 2021) networks bring with it opportunities for connectivity and innovation that have never been seen before in the rapidly advancing technological landscape of today. In spite of this, substantial security precautions are absolutely necessary in order to protect against the ever-evolving dangers that are posed by the internet. Traditional security approaches are proving to be insufficient when it comes to addressing the complexities of 6G networks, which are becoming

DOI: 10.4018/979-8-3693-2931-3.ch003

A Study on AI-ML-Driven Optimizing Energy Distribution and Sustainable Agriculture for Environmental Conservation

View Sample PDF

Author(s): J Barnabas Paul Glady (Department of Electrical and Electronic Engineering, Sathyabama Institute of Science and Technology, Chennai, India), Sonia Maria D'Souza (Department of Artificial Intelligence and Machine Learning, New Horizon College of Engineering, Bengaluru, India), A. Parvathi Priya (Department of Chemistry, RMK Engineering College, Chennai, India), K. Amuthachenthiru (Department of Artificial Intelligence and Data Science, Ramco Institute of Technology, Rajapalayam, India), G. Vikram (Karunya School of Management, Karunya Institute of Technology and Sciences, Coimbatore, India)and S. Boopathi (Mechanical Engineering, Muthayammal Engineering College, Namakkal, India)
Copyright: 2024
Pages: 27
Source title: Harnessing High-Performance Computing and AI for Environmental Sustainability
Source Author(s)/Editor(s): Arshi Naim (King Khalid University, Saudi Arabia)
DOI: 10.4018/979-8-3693-1794-5.ch001
Keywords: Engineering Science Reference / Environment & Agriculture / High Performance Computing / Sustainable Development

Purchase

View A Study on AI-ML-Driven Optimizing Energy Distribution and Sustainable Agriculture for Environmental Conservation on the publisher's website for pricing and purchasing information.

Abstract

The chapter examines how machine learning (ML) and artificial intelligence (AI) could be used to solve environmental problems throughout the world. It emphasizes how crucial AI and ML are to optimizing energy distribution, including energy demand forecasting, improving smart grid performance, and incorporating renewable energy sources. The chapter also covers the use of AI and ML methods to sustainable agriculture, emphasizing predictive analytics for pest management, soil health monitoring, and precision farming. It highlights the effectiveness of resource use and encourages actions that are ecologically friendly. The chapter also covers ethical issues, societal ramifications, legal systems, and the synergies between energy and agricultural solutions. It imagines a day when advances led by AI and ML will be essential to a sustainable and environmentally balanced planet.

Related Content

Office of the Controller General of Patents, Designs & Trade Marks
Department of Industrial Policy & Promotion,
Ministry of Commerce & Industry,
Government of India

(http://ipindia.nic.in/index.htm)

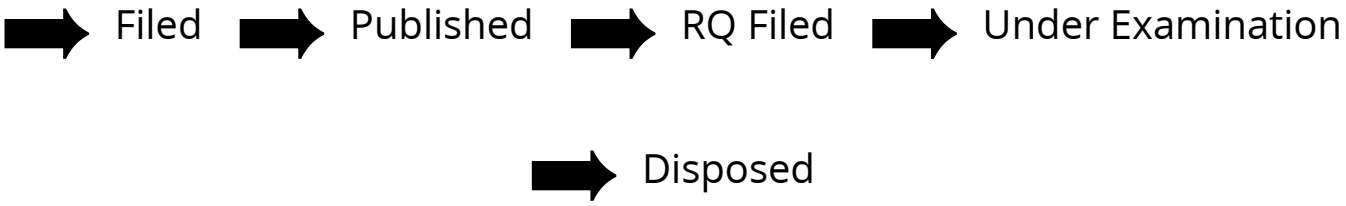
(http://ipindia.nic.in/index.htm)

Application Details	
APPLICATION NUMBER	202341084874
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	12/12/2023
APPLICANT NAME	1 . M Ramnath, Ramco Institute of Technology 2 . Yerra Anjali Satyavati, MLR Institute of Technology 3 . S Selva Birunda, Ramco Institute of Technology 4 . B Revathi, Ramco Institute of Technology 5 . Swaroop N S, G Madegowda Institute of Technology
TITLE OF INVENTION	SYSTEM AND MODEL FOR CLINICAL DECISION SUPPORT SYSTEM FOR RISK CATEGORIZATION USING MACHINE LEARNING
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	sbirunda@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	12/01/2024

Application Status

APPLICATION STATUS	Awaiting Request for Examination

			View Documents



In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

(http://ipindia.nic.in/index.htm)

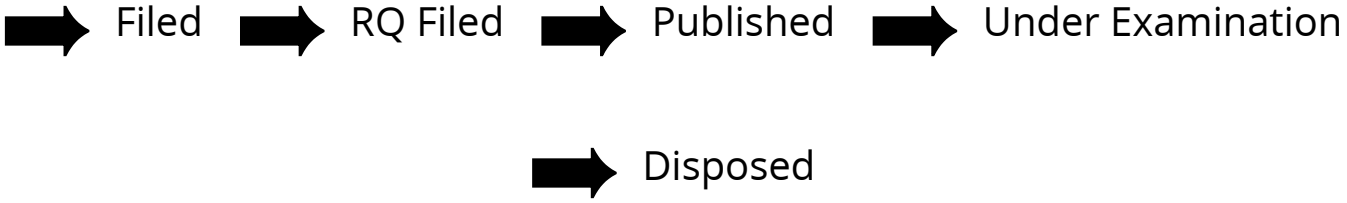
INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

(http://ipindia.nic.in/index.htm)

Application Details	
APPLICATION NUMBER	202441001629
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	09/01/2024
APPLICANT NAME	RAMCO INSTITUTE OF TECHNOLOGY
TITLE OF INVENTION	CLIMATE BASED SELF- SPEED CONTROL SYSTEM IN CAR USING ARTIFICIAL INTELLIGENCE
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	kaliappan@ritrjpm.ac.in
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	09/01/2024
PUBLICATION DATE (U/S 11A)	09/02/2024

Application Status	
APPLICATION STATUS	Application Awaiting Examination

View Documents



In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

(http://ipindia.nic.in/index.htm)

(http://ipindia.nic.in/index.htm)

Application Details	
APPLICATION NUMBER	202441074652
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	03/10/2024
APPLICANT NAME	RAMCO INSTITUTE OF TECHNOLOGY
TITLE OF INVENTION	FOOD DELIVERY ROBOT
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	03/10/2024
PUBLICATION DATE (U/S 11A)	11/10/2024

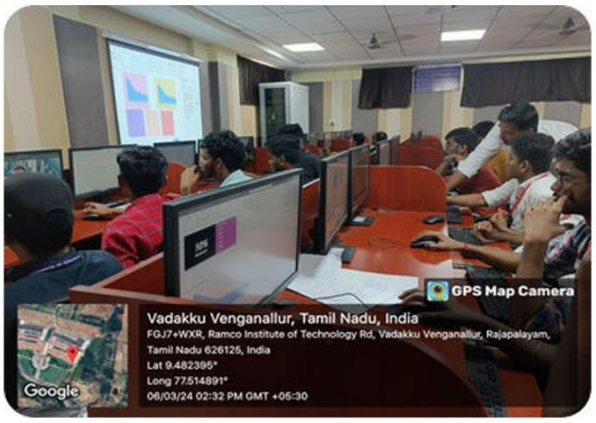
Application Status	
APPLICATION STATUS	Application Awaiting Examination

View Documents

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

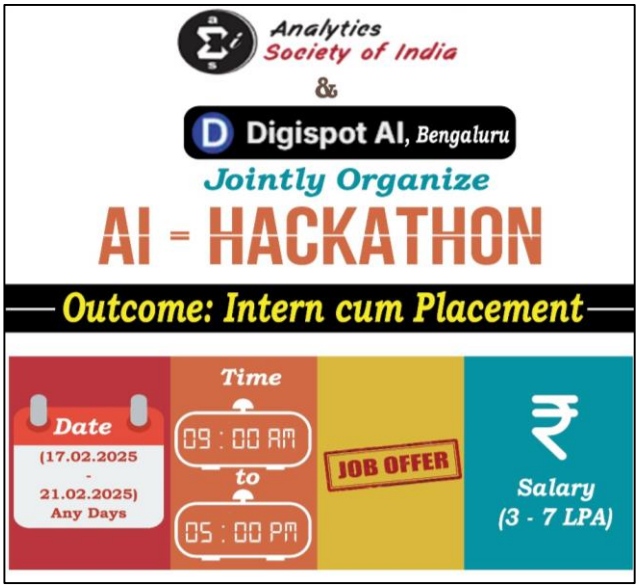
Gen AI Lab

NVIDIA Server-RTX600 48GB-128 GB DDR6-4TB SSD



ML/DL Lab

Intel i9 12th Gen - 32 GB RAM - 512 SSD - WiFi-Bluetooth



Research Lab

Intel i7 12th Gen - 32 GB RAM - 512 SSD - WiFi-Bluetooth