

Abdul Wahid

Employment

- Dec 2022 - **Post Doctoral Researcher**, *School of Computer Science*, University of Galway, current Ireland.
- Sep 2022 - **Research Engineer**, *École nationale supérieure d'ingénieurs Sud-Alsace (ENSISA)*,
Nov 2022 Université de Haute-Alsace (UHA), Mulhouse, France.
- Sep 2021 - **Post Doctoral Fellow**, *Department of INFRES*, Télécom Paris, Institut Polytechnique de Paris, France.
Sep 2022
- Aug 2016 - **Assistant Professor**, *Department of Computer Engineering*, National Institute of
Mar 2017 Technology, Kurukshetra, Haryana, India.

Education

- Oct 2021 **Ph.D.**, *Department of Computer Science and Engineering*, Indian Institute of Technology (Indian School of Mines) Dhanbad, Jharkhand, India.
- Jul 2016 **Master of Technology**, *Department of Computer Science and Engineering*, National Institute of Technology Patna, Bihar, India.
- Aug 2014 **Bachelor of Technology**, *Department of Information Technology*, Muzaffarpur Institute of Technology, Muzaffarpur, Bihar, India.

Research Interests

Anomaly Detection.
Machine Learning.
Data Mining.
Artificial Intelligence.
Evolutionary Computing.
Multi-agent Systems.

Achievements

- 2020 **IEEE CIS Grant**, *IEEE CIS Grant to participate in the International Joint Conference on Neural Networks (IJCNN 2020)*, Scotland, UK.
- 2018 **Best Student Paper Award**, *at the 12th IEEE International Conference on Software, Knowledge, Information, Management & Applications (SKIMA) in Phnom Penh, Cambodia.*
- 2018-2021 **Scholarship**, *Funding from MHRD for Senior Research Fellow (PhD Student)*, Amount: 35000 INR per month, Received from IIT(ISM), Dhanbad, India.
- 2017-2018 **Scholarship**, *Funding from MHRD for Junior Research Fellow (PhD Student)*, Amount: 25000 INR per month, Received from IIT(ISM), Dhanbad, India.

2014-2016 **Scholarship**, *Funding from MHRD for Master of Technology*, Amount: 12400 INR per month, Received from NIT Patna, India.

Funding

Oct 2023 **Charlemont Grant** (Submitted)
Title: EvoNets: Green Energy Fraud Detection
Funding: Royal Irish Academy, Ireland
Amount: 2,500.00 EUR

Supervision and Mentoring

PhD Students

2022-present **Iias Faiud**, *School of CS, University of Galway, Ireland.*
2022-present **Mian Ibad**, *School of CS, University of Galway, Ireland.*
2022-present **Hossein Khaleghy**, *School of CS, University of Galway, Ireland.*
2022-present **Nawazish Ali**, *School of CS, University of Galway, Ireland.*

M.Sc. Students

2023 **Smitesh Nitin Patil**, *School of CS, University of Galway, Ireland.*

Summer Intern Students

2023 **Daniel Garvey**, *School of CS, University of Galway, Ireland.*

Undergraduate Students

2016 **Nishant Prajapati**, *Department of CoE, NIT Kurukshetra, India.*
2016 **Parigya Singh**, *Department of CoE, NIT Kurukshetra, India.*
2016 **Sneha Sharma**, *Department of CoE, NIT Kurukshetra, India.*

Major Talks

Jan 2024 **Delivered a talk at School of Computer Science Research Seminar Series, at University of Galway, Ireland, Galway, Ireland.**

Dec 2023 **Session Chair at the 6th International Conference on Recent Trends in Image Processing and Pattern Recognition (RTIP2R), Derby, UK.**

Sep 2023 **Session Chair at the ECAI 2023 Workshop on Artificial Intelligence for Sustainability, Krakow, Poland.**

Jul 2023 **Delivered an invited talk at Machine Learning and its Applications in IoT, Computer Vision and Cloud Computing (MICC 2023) Course, NIT Jamshedpur, India.**

Apr 2022 **Delivered an invited talk at Faculty Development Programme on Advanced Machine Learning— Applications and Challenges, NIT Warangal and E&ICT Academy, India.**

Mar 2022 **Delivered an invited talk at Faculty Development Programme on Communication Systems using Machine Learning Algorithms, Annamacharya Institute of Technology & Sciences, India.**

Teaching and Lecturing

Courses at School of CS, University of Galway, Ireland

Feb 2023 **Applied Data Science with R (CT5163)**, *Lecture.*

Feb 2023 **Algorithms (CT1120)**, *Lecture.*

Courses at Department of CoE, NIT Kurukshetra, India

Jan-Mar 2017 **Introduction to Computer Engineering (COT-101)**, *Lecture and Lab.*

Aug-Dec 2016 **Compiler Design (IT-403)**, *Lecture and Tutorial.*

Institutional Responsibilities

Aug-Dec 2016 **Course Co-ordinator for Compiler Design (IT-403)**, *Department of CoE, NIT Kurukshetra, India.*

Aug-Dec 2016 **Member of Anti Ragging Committee**, *NIT Kurukshetra, India.*

Professional Activities

Organizing Committees

- 1 **IASE 2024**, *Organizer at Workshop on Intelligent Agents in Science and Engineering (IASE) co-located with PAAMS 2024, June 26-28, 2024, Salamanca , Spain.*
- 2 **AI4S 2023**, *Organizer at Workshop on Artificial Intelligence for Sustainability (AI4S) co-located with ECAI 2023, September 30-October 1, 2023, Krakow, Poland.*
- 3 **DLSPA 2023**, *Organizer at Workshop on Deep Learning for Sustainable Precision Agriculture co-located with ECML PKDD 2023, September 22, 2023, Turin, Italy.*
- 4 **RTIP2R 2023**, *Special Track Organizer at 6th International Conference on Recent Trends in Image Processing and Pattern Recognition (RTIP2R)-2023 to be held on 07-08 December 2023 at University of Derby, UK.*
- 5 **BESC 2023**, *Special Session Organizer at 10th International Conference on Behavioural and Social Computing (BESC)-2023 to be held on 30 October - 1 November 2023, Cyprus.*

Edited Books

- 1 **Artificial Intelligence. ECAI 2023 International Workshops**, *Published by Springer Cham.*
- 2 **Advanced Techniques for Anomaly Detection**, *Editing a book on "Advanced Techniques for Anomaly Detection", Published by CRC Press (Taylor & Francis Group).*

Guest Editors

- 1 **Measurement: Sensors, Elsevier**, *Special Issue on "Measurement, Control and Security of Systems for Smart Cities", Measurement: Sensors, Elsevier.*
- 2 **Electronics, MDPI**, *Special Issue on "Recent Trends and Applications of Artificial Intelligence", Electronics, MDPI (Impact Factor: 2.690).*

- 3 **Sensors, MDPI**, *Special Issue on "Emerging Machine Learning, Blockchain, Sensor and Sensing Technologies for Computer Vision Applications"*, *Sensors, MDPI (Impact Factor: 3.847)*.
- 4 **Scalable Computing: Practice and Experience**, *Special Issue on "Machine Learning and Block-chain based solution for privacy and access control in IoT"*, *Scalable Computing: Practice and Experience*.

Reviewers

- 1 **Transactions on Knowledge and Data Engineering**.
- 2 **Expert Systems With Applications**.
- 3 **Engineering Applications of Artificial Intelligence**.
- 4 **IEEE Transactions on Big Data**.
- 5 **Neural Processing Letters**.
- 6 **ACM Transactions on Asian and Low-Resource Language Information Processing**.
- 7 **IEEE Transactions on Systems, Man, and Cybernetics: Systems**.
- 8 **IEEE Transactions on Computational Social Systems**.
- 9 **IEEE SMC Magazine**.
- 10 **IEEE Access**.
- 11 **IEEE Transactions on Emerging Topics in Computational Intelligence**.
- 12 **International Journal of Systems Assurance Engineering and Management**.
- 13 **ACM Transactions on Management Information Systems**.
- 14 **Transactions on Emerging Telecommunications Technologies**.
- 15 **Transactions on Consumer Electronics**.
- 16 **Journal of Supercomputing**.
- 17 **International Journal of Communication Networks and Distributed Systems**.

Major Research Projects.

- Dec 2022 – present **Effective Integration of Renewable Energy within the Agriculture Sector in Ireland using AI**,
School of Computer Science, University of Galway, Ireland,
Project Funder: Science Foundation Ireland (SFI),
Role: Development of AI model to integrate renewable energy into dairy farming.
- Sep 2022– Nov 2022 **Anomaly and Fraud Detection from Banking Data**,
ENSISA, Université de Haute-Alsace (UHA), Mulhouse, France,
Project Funder: Région Grand-Est,
Role: Development of AI-based model for detecting credit card frauds.
- Sep 2021– Sep 2022 **Fraud Detection in Telecommunications using AI**,
Department of INFRES, Telecom Paris, France,
Project Funder: BPI France and Pays de Loire and Auvergne Rhone Alpes,
Role: Development of a real-time fraud detection system for telephony network.

Publications

Journal Articles

1. Shah, I., **Wahid, A.**, Barrett, E., Mason, K., (2024). Multi-Agent Systems in Peer-to-Peer Energy Trading: A Comprehensive Survey. *Engineering Applications of Artificial Intelligence*, 132, pp. 107847.
2. **Wahid, A.**, Msahli, M., Bifet, A., & Memmi, G. (2023). NFA: A Neural Factorization Autoencoder-based Online Telephony Fraud Detection. *Digital Communications and Networks*, pp. xxx-xxx.
3. Gaur Rajkumar, Prakash Shiva, Kumar Sanjay, Abhishek Kumar, Msahli Mounira, **Wahid Abdul**, (2022). A Machine-Learning–Blockchain-Based Authentication Using Smart Contracts for an IoHT System. *Sensors*, 22(23), pp.xxxx-xxxx.
4. **Wahid, A.** and Rao, A.C.S., (2022). RDOF: An outlier detection algorithm based on relative density. *Expert Systems*, 39(2), p.e12859.
5. **Wahid, A.** and Annavarapu, C.S.R., (2021). NaNOD: A natural neighbour-based outlier detection algorithm. *Neural Computing and Applications*, 33(6), pp.2107-2123.
6. **Wahid, A.** and Rao, A.C.S., (2021). Odra: an outlier detection algorithm based on relevant attribute analysis method. *Cluster Computing*, 24(1), pp.569-585.
7. **Wahid, A.** and Rao, A.C.S., (2020). Rkdos: A relative kernel density-based outlier score. *IETE Technical Review*, 37(5), pp.441-452.

Conference Papers

1. **Wahid, A.** and Rao, A.C.S., 2020, July. An Outlier Detection Algorithm based on KNN-kernel Density Estimation. In *2020 International Joint Conference on Neural Networks (IJCNN)* (pp. 1-8). IEEE.
2. **Wahid, A.**, Rao, A.C.S. and Deb, K., 2018, December. A relative kernel-density based outlier detection algorithm. In *2018 12th International Conference on Software, Knowledge, Information Management & Applications (SKIMA)* (pp. 1-7). IEEE.
3. **Wahid, A.** and Rao, A.C.S., 2019. A distance-based outlier detection using particle swarm optimization technique. In *Information and Communication Technology for Competitive Strategies* (pp. 633-643). Springer, Singapore.
4. **Wahid, A.**, Rao, A.C.S. and Goel, D., 2019. Server communication reduction for GPS-based floating car data traffic congestion detection method. In *Integrated Intelligent Computing, Communication and Security* (pp. 415-425). Springer, Singapore.
5. **Wahid, A.** and Kashyap, K., 2019. Cassandra—A distributed database system: An overview. *Emerging technologies in data mining and information security*, pp.519-526.
6. **Wahid, A.**, Haider, M.T.U., Ahmad, M.M. and Singh, A.K., 2016, March. Adaptive route planning in spatial road networks. In *2016 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET)* (pp. 1281-1285). IEEE.
7. **Wahid, A.**, Haider, M. and Uddin, T., 2017. Collectively Find Spatial Objects in Time-Dependent Spatial Network. In *Advances in Computational Intelligence* (pp. 403-414). Springer, Singapore.

Book Chapters

1. **Wahid, A.**, Faiud, I. and Mason, K., 2023. *Integrating Renewable Energy in Agriculture: A Deep Reinforcement Learning-based Approach*, In *Proceedings of the Workshop on Deep Learning for Precision Agriculture*, held in conjunction with the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (pp. xx-xx). Turin, Italy.
2. Hua, Weiqi, Daniel Mullen, **Abdul Wahid**, Khadija Sitabkhan, and Karl Mason. "An Overview of Artificial Intelligence for Electric Vehicle Energy Systems Integration." In *European Conference*

- on Artificial Intelligence, pp. 178-186. Cham: Springer Nature Switzerland, 2023.
3. Khaleghy, Hossein, **Abdul Wahid**, Eoghan Clifford, and Karl Mason. "Modelling Electricity Consumption in Irish Dairy Farms Using Agent-Based Modelling." In European Conference on Artificial Intelligence, pp. 230-237. Cham: Springer Nature Switzerland, 2023.
 4. Shah, Mian Ibad Ali, **Abdul Wahid**, Enda Barrett, and Karl Mason. "A Multi-agent Systems Approach for Peer-to-Peer Energy Trading in Dairy Farming." In European Conference on Artificial Intelligence, pp. 254-261. Cham: Springer Nature Switzerland, 2023.
 5. Ali, Nawazish, **Abdul Wahid**, Rachael Shaw, and Karl Mason. "Reinforcement Learning for Battery Management in Dairy Farming." In European Conference on Artificial Intelligence, pp. 246-253. Cham: Springer Nature Switzerland, 2023.

Preprints

1. **Wahid, A.**, Sharma, R. and Annavarapu, C.S.R., 2021. A Graph Convolutional Neural Network based Framework for Estimating Future Citations Count of Research Articles. arXiv preprint arXiv:2104.04939.

Patent

1. Mounira Msahli, Gérard Memmi, Albert Bifet, **Abdul Wahid**, Weichen Tao, Fabrice Chesneau, and Lilian Perron, *Adaptive and Secure Online Fraud Detection System for Telecom Industries*, filed by the European Patent Office, December 2022.

References

1. **Dr. Karl Mason**
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2. **Dr. Annavarapu Chandra Sekhara Rao**
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