Md Shadab Alam

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Employment History

2023 – Ongoing **Researcher** Eindhoven University of Technology (TU/e), Eindhoven, The Netherlands

2021 – 2023 **Junior Research Fellow** Centre for Industrial Consultancy and Sponsored Research, Chennai, India

Education

2023 – Ongoing **Ph.D., Eindhoven University of Technology** Industrial Design.
Thesis title: *Connected data from autonomous vehicles and road users to enhance safety.*

2021 – 2023 **M.Sc., Indian Institute of Technology (IIT) Madras** in Robotics and Artificial Intelligence.
Thesis title: *Data driven control for marine vehicle maneuvering.*

2016 – 2020 **B.tech. ,Jamia Millia Islamia** in Mechanical Engineering.
Thesis title: *Design of Product Prototype for Inventory Management 4.0.*

Skills

Languages	English, Hindi, Urdu
Coding	Python, C++, C, C#, JavaScript, R, Go, Rust, Latex,
Machine/Deep Learning	TensorFlow, PyTorch, CV, Numpy, Pandas, Transformers, NLP, LangChain, Prompt Engineering, Reinforcement Learning, GANs, Graph Neural Networks
ML Engineering	Model Deployment, ML Pipelines, Model Monitoring, A/B Testing
MLOps	Docker, Kubernetes, MLflow, DVC, CI/CD for ML, Terraform
Data Engineering	SQL, Apache Spark, Hadoop, Snowflake
Data Visualization	Matplotlib, Seaborn, Plotly, Dash, Power BI, Excel
Web Development	HTML, CSS, JavaScript, Apache Web Server, Tomcat Web Server, Flask, FastAPI, Heroku
Database Management	MongoDB
Robotics	ROS, Sensor Integration
Version Control	Git, GitHub, GitLab, Bitbucket
Cloud Platforms	Amazon AWS (Sagemaker), Google Cloud Platform (GCP), Microsoft Azure
Misc.	Unity, Unreal Engine, Scala

Research Publications

Journal Articles

1. M. S. Alam, M. Martens, O. Bazilinska, and P. Bazilinskyy, "Understanding global pedestrian behaviour in 565 cities with dashcam videos on youtube," 2025.

2. M. S. Alam and I. Carlucho, "Harnessing traditional controllers for fast-track training of deep reinforcement learning control strategies," *Journal of Marine Engineering & Technology*, pp. 1–12, 2024. DOI: https://doi.org/10.1080/20464177.2024.2367276.

3. M. S. Alam, V. Deogaonkar, and A. Somayajula, "Enhancing autonomy: Comparative analysis of machine learning-based controllers in extended action states," *Under Review*, Apr. 2024.

4. R. Deraj, R. S. Kumar, M. S. Alam, and A. Somayajula, "Deep reinforcement learning based controller for ship navigation," *Ocean Engineering*, vol. 273, p. 113 937, 2023. DOI: https://doi.org/10.1016/j.oceaneng.2023.113937.

Conference Proceedings

1. M. S. Alam, M. Martens, and P. Bazilinskyy, "Generating realistic traffic scenarios: A deep learning approach using generative adversarial networks (gans)," 3, vol. 3, AHFE Open Acces, 2025. DOI: 10.54941/ahfe1005927.

2. M. S. Alam, S. H. Parmar, M. H. Martens, and P. Bazilinskyy, "Deep learning approach for realistic traffic video changes across lighting and weather conditions," in *Proceedings of International Conference on Information and Computer Technologies (ICICT)*, Hilo, HI, USA, 2025.

3. P. Bazilinskyy, M. S. Alam, and R. Merino-Martınez, "Pedestrian crossing behaviour in front of electric vehicles emitting synthetic sounds: A virtual reality experiment," in *Proceedings of InterNoise, 53rd International Congress & Exposition on Noise Control Engineering*, Sao Paulo, Brazil, 2025.

4. P. Bazilinskyy, M. S. Alam, and R. Merino-Martınez, "Psychoacoustic assessment of synthetic sounds for electric vehicles in a virtual reality experiment," in *Proceedings of 11th Convention of the European Acoustics Association (Euronoise)*, Malaga, Spain, 2025.

5. M. S. Alam, T. Subramanian, M. Martens, W. Remlinger, and P. Bazilinskyy, "From a to b with ease: User-centric interfaces for shuttle buses," in *Adjunct Proceedings of the 16th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, ser. AutomotiveUI '24 Adjunct, Stanford, CA, USA: Association for Computing Machinery, 2024, pp. 111–116, ISBN: 9798400705205. DOI: 10.1145/3641308.3685033.

6. M. S. Alam, "Data driven control for marine vehicle maneuvering," Jul. 2023. DOI: 10.13140/RG.2.2.16194.15045.

7. M. S. Alam, S. K. Ramkumar Sudha, and A. Somayajula, "Ai on the water: Applying drl to autonomous vessel navigation," in *Proceedings of the Sixth International Conference in Ocean Engineering (ICOE2023)*, 2023. DOI: https://doi.org/10.48550/arXiv.2310.14938. arXiv: 2310.14938 [eess.SY].

8. J. Jose, M. S. Alam, and A. S. Somayajula, "Navigating the ocean with drl: Path following for marine vessels," in *Proceedings of the Sixth International Conference in Ocean Engineering (ICOE2023)*, 2023. DOI: https://doi.org/10.48550/arXiv.2310.14932. arXiv: 2310.14932 [eess.SY].

9. S. K. Ramkumar Sudha, M. S. Alam, B. Reddy, and A. S. Somayajula, "Comparison of path following in ships using modern and traditional controllers," in *Proceedings of the Sixth International Conference in Ocean Engineering (ICOE2023)*, 2023. arXiv: 2310.14940 [eess.SY]. URL: https://arxiv.org/abs/2310.14940.

Miscellaneous Experience

Awards and Achievements

2022 **Winner at VRX Competition** organized by the Office of Naval Research (ONR), Naval Postgraduate School (NPS), and Open Robotics, competing against teams across 5 continents.

Miscellaneous Experience (continued)

- **Winner, Data Analysis Hackathon Competition** organized by IEEE Oceans 2022.

Reviewer

2024

- **NeurIPS** Appointed as NeurIPS conference reviewer.
- **International Journal of Control, Automation, and Systems** Reviewed one journal paper in International Journal of Control, Automation, and Systems Journal.
- **Journal of intelligent & robotic systems** Reviewed one journal paper in Journal of intelligent & robotic systems Journal.
- **Ocean engineering** Reviewed five journal paper in Ocean engineering Journal.
- **Engineering Applications of Artificial Intelligence** Reviewed one journal paper in Engineering Applications of Artificial Intelligence Journal.

Internship

2022 **Goalwit Technologies**. Developed a deep learning model for protecting premium members.

2018 **Guinea Motors Pvt. Ltd**. Developed an Inventory management system using Linear Regression and classified the inventory in accordance to Pareto distribution.

Certification

2022 **IELTS**. Got 7.5 band.

2021 **Introduction to TensorFlow for Artificial Intelligence, Machine Learning & Deep Learning**. Awarded by DeepLearning.ai.

Other Activities

2024 - 2025 **Web Chair**. Appointed web chair for the IEEE conference: `https://www.ro-man2025.org/`.

2022 - 2023 **Placement Coordinator**. Appointed as placement coordinator for masters and PhD students at IIT Madras.