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
2020 – 2021	**Lecturer** Holy Cross School, 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, LaTeX
Machine/Deep Learning	TensorFlow, PyTorch, Google JAX, Scikit-Learn, Keras, CV, Numpy, Pandas, Transformers, 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
Data Engineering	Apache Spark
Data Visualization	Matplotlib, Seaborn, Plotly, Dash
Web Development	Html, CSS, JavaScript, Apache Web Server, Tomcat Web Server, Flask, FastAPI
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

Research Publications

Journal Articles

1. M. S. Alam, M. Martens, and P. Bazilinskyy, "Evaluation of pedestrian behaviour in 157 cities with 285 hours of dashcam footage from youtube," *Under Review*, 2024.

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

4   **Alam, Md Shadab**, M. Martens, and P. Bazilinskyy, "Generating realistic traffic scenarios: A deep learning approach using generative adversarial networks (gans)," *Under Review*, 2024.

5   R. Deraj, R. S. Kumar, **Alam, Md Shadab**, 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   **Alam, Md Shadab**, 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.

2   **Alam, Md Shadab**, "Data driven control for marine vehicle maneuvering," Jul. 2023. 🔗 DOI: 10.13140/RG.2.2.16194.15045.

3   J. Jose, **Md Shadab 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].

4   **Md Shadab Alam**, S. K. R. 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].

5   S. K. R. Sudha, **Md Shadab 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.

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

Internship

🔖 **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.

Miscellaneous Experience (continued)

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 - 20223   **Placement Coordinator**. Appointed as placement coordinator for masters and PhD students at IIT Madras.