

## Dr. Vaibhav Malviya



### Career Objective

To make the best use of my technical expertise in teaching and research in a reputed academic institution and industry.

### Publication

#### International Journals – SCI/SCIE/Scopus

1. Vishnu Dev Tripathi, Vaibhav Malviya, Rahul Kala (2026). Force-Level Fusion of a Diffusion Transformer Model with a Learnable Social Force Model based Elastic Strip for Safe Trajectory Prediction. *IEEE Robotics and Automation Letters*, 11 (7), 8552 – 8559, DOI: 10.1109/LRA.2026.3699151.
2. Priyanka, Vaibhav Malviya (2026). Entropy-driven whale optimizer for detection of vector born diseases from hematological images. *Knowledge-Based Systems*, 1-15, DOI: 10.1016/j.knosys.2026.116219.
3. Priyanka, Vaibhav Malviya (2026). A Robust Pipeline of Pre-processing and Segmentation System for Parasite Detection in Hematological Images. *International Journal of Information Technology*, (Accepted).
4. Sourav Paul, Ranjita Das, Vaibhav Malviya, Anurag Mhatre (2025). Comparative Analysis of Transfer Learning and Few-Shot Learning with CNN Architectures for Chest X-Ray Classification under Data Constraints. *Informatica*, 49 (4), 825-840 DOI: <https://doi.org/10.31449/inf.v49i4.7751>.
5. V. Malviya, R. Kala (2023). Socialistic 3D Tracking of Humans from a Mobile Robot for a ‘Human Following Robot’ Behaviour. *Robotica*, 41 (5), 1407-1435, DOI: <https://doi.org/10.1017/S0263574722001795>.
6. V. Malviya, R. Kala (2023). Navigation with a Cooperative Social Robot for a group of visitors using face detection and a ‘stop and wait’ scheme. *Journal of Scientific and Industrial Research*, 82 (10), 1009-1021, DOI: <https://doi.org/10.56042/jsir.v82i10.3571>.
7. V. Malviya, Rahul Kala (2022). Trajectory prediction and tracking using a multi-behaviour social particle filter. *Applied Intelligence*, 52(7), 7158-7200, DOI: <https://doi.org/10.1007/s10489-021-02286-6>.
8. A.K. Reddy, V. Malviya, R. Kala (2021). Social Cues in the Autonomous Navigation of Indoor Mobile Robots. *International Journal of Social Robotics*, 13 (6), 1335–1358, DOI: <https://doi.org/10.1007/s12369-020-00721-1>.
9. V. Malviya, A.K. Reddy, R. Kala (2020). Autonomous Social Robot Navigation using a Behavioral Finite State Social Machine. *Robotica*, 38(12), 2266-2289, DOI: <https://doi.org/10.1017/S0263574720000259>.

### Conferences

1. Saurabh Kumar Gupta, Gaurav Kumar Yadav, Vaibhav Malviya, Abhinav Malviya (2026). Mask-Guided Multiple Instance Learning for Patient-Level Colorectal Cancer Classification from CT Imaging. In the *International Conference on Emerging Trends and Technologies on Intelligent Systems*. (Accepted).
2. Pragya Tripathi, Rishabh Shukla, Gaurav Kumar Yadav, Vaibhav Malviya, Abhinav Malviya (2026), Multi-class Classification of Heart Sound Using PCG Recordings. In the *International Conference on Emerging Trends and Technologies on Intelligent Systems*. (Accepted).
3. Smriti Bharti, Kishor Malakar, Abhinav Malviya and Vaibhav Malviya (2026), GeoAI Forecasting: ML models for earthquake prediction using satellite data. In the *International Conference on Emerging Trends and Technologies on Intelligent Systems*. (Accepted).
4. Arun Kumar Sahoo, Vaibhav Malviya, Avinash Samantra, Rashmi Rani Patro, Shrikant Malviya, and Sasanka Choudhury (2026). “ADSDF: A Tri-Modal Gated Fusion Framework Integrating Semantic, Sparse, and Lexical Cues for Suicidal Ideation Detection”. In *International Conference on Emerging Trends in Advancements and Applications of Computational Intelligence Techniques (ETA ACT 2026)* (Accepted), In *1<sup>st</sup> International Conference on Emerging Trends in Advancements and Applications of Computational Intelligence Techniques (ETA ACT)* (pp. 1-6). IEEE, DOI: 10.1109/ETA ACT69135.2026.11541658.
5. V.D. Tripathi, R. Kala, V. Malviya (2026). Trajectory Prediction considering Behaviours using Learning-based and Model-based Approaches. In *IEEE Guwahati Subsection Conference 2026* (Accepted).

6. A. Malviya, V.D. Tripathi, R. Kala, V. Malviya (2025). Behaviour Conditioned Interactive Synthetic Dataset for Indoor Scenarios. In Proceedings of the 2025 7th International Conference on Advances in Robotics (pp. 1-6), DOI: <https://doi.org/10.1145/3787370.3787434>.
7. V.D. Tripathi, R. Kala, V. Malviya (2025). Soft Kinematics-Constrained Smooth Trajectory Prediction Using a Diffusion Transformer-Based Architecture. In *14<sup>th</sup> International Conference on Control, Automation and Information Sciences (ICCAIS)* (pp. 238-243). IEEE, DOI: 10.1109/ICCAIS67508.2025.11262175.
8. Priyanka, V. Malviya (2025), Vector-Borne Disease Image Quality Assessment Using BRISQUE: A Blind Image Quality Evaluation Approach. In *International Conference on Computing, Communication and Networking Technologies* (2025). (Accepted).
9. Sourav Paul, Vaibhav Malviya, Ranjita Das (2025). Thorax Diseases Detection Using Computer Vision from Chest X-Ray Images. In *International Conference on Data Science and Applications* (pp. 440-451), DOI: [https://doi.org/10.1007/978-3-032-12827-0\\_34](https://doi.org/10.1007/978-3-032-12827-0_34).
10. Debraj Chatterjee, Vaibhav Malviya, Ranjita Das, Akash Kotal (2024), Efficient Flood Detection via Deep Ensemble Learning Methods. In *International Conference on Microelectronics, Electromagnetics and Telecommunication* (pp. 203-220). DOI: [https://doi.org/10.1007/978-981-96-7249-3\\_16](https://doi.org/10.1007/978-981-96-7249-3_16)
11. V. Malviya, R. Kala (2018). Tracking Vehicle and Faces: Towards Socialistic Assessment of Human Behaviour. In *2018 Conference on Information and Communication Technology (CICT)* (pp. 1-6). IEEE, DOI: 10.1109/INFOCOMTECH.2018.8722427.
12. V. Malviya, G.P. Gupta (2015). Performance evaluation of similarity-based link prediction schemes for social network. In *2015 International Conference on Next Generation Computing Technologies (NGCT)* (pp. 654-659). IEEE, DOI: 10.1109/NGCT.2015.7375202.

#### **Book Chapters**

1. A. Chhetry, R. Kala, V. Malviya (2025). Advanced Machine Learning and Artificial Intelligence Techniques at the Edge. "Edge Intelligence and Analytics for IoT", CRC Press, Taylor & Francis (pp. 78-104). INBN: 9781003512066, DOI: <https://doi.org/10.1201/9781003512066>. Web link: <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003512066-5/advanced-machine-learning-artificial-intelligence-techniques-edge-anish-chhetry-rahul-kala-vaibhav-malviya>.
2. K. Malakar, R. Kala, V. Malviya (2025). Edge Intelligence Based Social Robotics: Planning, and its applications, "Edge Intelligence and Analytics for IoT", CRC Press, Taylor & Francis (pp: 152-177). DOI: <https://doi.org/10.1201/9781003512066>. Web link: <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003512066-8/edge-intelligence%E2%80%9393based-social-robotics-kishor-malakar-rahul-kala-vaibhav-malviya>.

#### **Patents**

1. V. Malviya, R. Kala (2025). Robot Navigation System Based on Behavioural Finite State Social Machine and A Method Thereof. South African Patent, No.: 2024/05220.
2. V. Malviya, R. Kala (2024). A Controlled Navigation System of Robot to Navigate Visitors Using Face Detection. German Patent, No.: 202024103734.

#### **Project:**

1. Title: Socially-Interactive Vacuum Cleaning Robot for On-Human Demand and Human-Instructed Cleaning, Role: Co-PI, ANRF (ARG).

#### **Academic Profile:**

| Degree                 | Institute                                                                                          |
|------------------------|----------------------------------------------------------------------------------------------------|
| Doctor of Philosophy   | Indian Institute of Information Technology, Allahabad.                                             |
| Master of Technology   | Jaypee Institute of Information Technology, Noida.                                                 |
| Bachelor of Technology | United College of Engineering and Research, Allahabad, UP.<br>(Uttar Pradesh Technical University) |

#### **Research Supervision**

- Sourav Paul (Awarded)

### **Workshop & Conference**

- Conducted a one-week short-term course, “Robot Motion Planning (RMP 2024),” from 25<sup>th</sup> March 2024 to 30<sup>th</sup> March 2024.
- Nominated for Organising “Jal Shakti Abhyan-Catch the Rain 2023”.
- Deliver a two-hour expert talk on “Autonomous Social Robots” at Indira Gandhi Delhi Technical University, Delhi.
- Organized ‘Workshop on Robotics and Machine Intelligence’ at IIIT Allahabad in January 2020
- Attended 2018, IEEE CICT 2018.
- Attended ‘Faculty Development Programme’ 4<sup>th</sup> to 9<sup>th</sup> July 2016 at UCER Allahabad.
- Attended 2015, IEEE International Conference on Next Generation Computing Technologies (NGCT-2015), held at UPES, Dehradun.

### **Achievements**

- Qualified GATE 2013 with 98.58 percentile.
- Qualified GATE 2012 with 91.75 percentile.
- Achieve 1<sup>st</sup> Position for poster presentation on National Science Day 2019.
- Arun Kumar Sahoo, Vaibhav Malviya, Avinash Samantra, Rashmi Rani Patro, Shrikant Malviya, and Sasanka Choudhury (2026). “ADSDF: A Tri-Modal Gated Fusion Framework Integrating Semantic, Sparse, and Lexical Cues for Suicidal Ideation Detection”. In International Conference on Emerging Trends in Advancements and Applications of Computational Intelligence Techniques (ETA ACT 2026) (Accepted), In *1<sup>st</sup> International Conference on Emerging Trends in Advancements and Applications of Computational Intelligence Techniques (ETA ACT)* (pp. 1-6). IEEE, DOI: 10.1109/ETA ACT69135.2026.11541658 (Awarded as best paper).
- Smriti Bharti, Kishor Malakar, Abhinav Malviya and Vaibhav Malviya (2026), GeoAI Forecasting: ML models for earthquake prediction using satellite data. In the International Conference on Emerging Trends and Technologies on Intelligent Systems (Awarded as best paper and 5000 INR prize for the best paper).