Mayur Mankar

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Education

Indian Institute of Science Education and Research Bhopal   2020 - Present
BS-MS (5-year), Department of Data Science and Engineering

Work Experience

PawScan.AI   Co-founder
- Early stage startup providing end-to-end AI-based surveillance systems combining gait recognition and face recognition for precise and robust human identification.
- Pre-incubated at IICE-IISER Bhopal and PIEDS-BITS Pilani.

Research Experience

Indian Institute of Technology Delhi
ACM IKDD: Uplink Internship Program | Guide: *Dr. Srikanta Bedathur*
Project Title - Adversarial Attack and Defense on Temporal Graphs

iHub Anubhuti-IIIT Delhi Foundation
CHANAKYA PG fellowship | Guide: Guide: *Dr. Vaibhav Kumar*
Project Title - Advanced precise and robust human identification mechanism combining 3D point cloud gait recognition and video face recognition

Indian Institute of Technology Roorkee
Google Research Sponsored Mentorship Program | Guide: *Dr. Neetesh Kumar*
Project Title - Anomaly detection in road traffic

Shiv Nadar Institute of Eminence
Mentoring of Engineering Students by INAE Fellows | Guide: *Dr. Prasun K. Roy*
Project Title - Comparing Robustness of Neuroimaging Segmentation Models to Adversarial Attacks

Shiv Nadar Institute of Eminence
INSA-IASc-NASI Summer Research Fellowship Program | Guide: Dr. *Dr. Sandeep Sen*
Project Title - 3D Point Cloud Semantic Segmentation of Indoor Scenes using Few-shot Learning

Indian Institute of Technology Ropar
Energy Mentors - IIT Ropar Internship Program
Project Title - Developing a Digital Twin for a Hybrid Energy System

Achievements

IEEE Travel Grant for Winter School on Biometrics 2024, SUSTech, China.
Student Travel Grant for IndoML 2023, IIT Bombay.
Short Presentation at Frontiers Symposium in Data Science 2024, IISER TVM.
Invited Participant at Workshop on Reinforcement Learning 2024, IISc Bengaluru.
2nd Place in a Hackathon conducted at IIT Roorkee.

Technical Skills

Programming Languages/Software: Python, R, C++, MATLAB, Stata   **Frameworks:** PyTorch, TensorFlow
Platforms: 3DEXPERIENCE, QGIS, FSL, CityEngine, Blender, Cloud Compare   **Databases:** MySQL, PostgreSQL
Web Development: HTML, CSS, Javascript   **Operating Systems:** Windows, Linux
Office automation: LaTeX, Word, Excel, PowerPoint

Poster Presentations

3D Point Cloud Semantic Segmentation of Indoor Scenes using Few-shot Learning [Poster]
Mayur Mankar*, Sandeep Sen, Vaibhav Kumar [IndoML 2023]

Enhancing Diagnostic Accuracy by Remediation of Adversarial Attacks on Deep Learning-Based Neuroimaging Systems [Poster]

Mayur Mankar∗ , Parth Joshi, Prasun K. Roy [NAMSCON 2023]

Ready Trans-Information based Assessment of Neurocognitive Salience level Electrophysiologically [Poster]

Parth Joshi∗ , Pratik Purohit, Mayur Mankar, Prasun K. Roy [NAMSCON 2023]

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Selected Projects

Using LocalGPT to interact with biopharma-related databases   Nov 2023

Guide: *Dr. Parthiban Srinivasan*   [GitHub]

- Obtained the first 10 full-text review papers from PubMed, published in 2022, focusing on "triple-negative breast cancer".
- Configured LocalGPT (LlamaCpp-Python) and initiated interactive discussions with the documents.

Docker Environment for face detection   Oct 2023

Guide: *Dr. Vinod Kurmi*   [GitHub]

- Created a Docker environment for face detection using the "Ultra-Light-Fast-Generic-Face-Detector-1MB" repository.
- Implemented multi-threaded matrix multiplication on a (1000x1000) matrix.

Balanced MSE for Imbalanced Visual Regression   Feb 2023 - Apr 2023

Guide: *Dr. Vinod Kurmi*   [GitHub]

- Reproduced all the results of the paper. In the process, some bugs in the code were fixed.
- The whole analysis is done on a new dataset (AgeDB). Also, two new loss functions are introduced namely sMAPE and logcosh.

Multilingual abusive comment detection in Hindi, Tamil, Malayalam, Kannada, and Telugu text   Nov 2022

Guide: *Dr. Parthiban Srinivasan*   [GitHub]

- Implemented transformer-based models for the detection of offensive text in languages such as Hindi, Tamil, Malayalam, Kannada, and Telugu.
- Conducted experiments on the dataset, providing a comprehensive analysis of performance and errors, thereby establishing a valuable baseline for future comparisons.

Key Courses

- **Mathematics:** Calculus of One Variable, Linear Algebra, Multivariable Calculus, Discrete Mathematics-I, Probability and Statistics
- **Data Science and Engineering:** Data Structure and Algorithms, Machine Learning, Deep Learning, Artificial Intelligence, Natural Language Processing, Computer Vision, Spatial Data Science and Applications, Machine Learning for Biopharma
- **Economics:** Econometrics-I, Econometrics-II, [Money, Banking and Financial Markets]

Teaching Experience

Teaching Assistant - DSE313-Artificial Intelligence taught by Dr. Vaibhav Kumar, IISER Bhopal

Positions of Responsibilty

Chair - IISER Bhopal ACM Student Chapter   Jul 2024 - Present

Working Team Member - Student Development Council, IISER Bhopal   Aug 2022 - Aug 2023

Volunteering and Extracurricular Activities

ISMIR 2023 - Student Volunteer

Enthuzia 2024, IISER Bhopal - PR Team Member

Singularity 2022, IISER Bhopal - Treasure Hunt Coordinator
Open House 2022, IISER Bhopal - Representative of DSE department