Jiya Sinha

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Google Scholar

Research Interests: Machine Learning · Deep Learning · Computer Vision · Generative Models · Audio Processing

Education

Indian Institute of Science Education and Research,Bhopal 2022- 2027
BS-MS Data Science and Engineering *CPI (7^{th} Sem): 8.5/10*

Laxman Public School, New Delhi 2020-2022
Class XII (CBSE): 94%

Mount Carmel School, Chandigarh 2016-2020
Class X (CBSE): 96.33%

Relevant Courses

Deep Learning, Machine Learning, Natural Language Processing, Computer Vision, 3D Deep Learning and Applications, Artificial Intelligence, Machine Learning with graphs, Applied Accelerated Artificial Intelligence, Data Structures and Algorithms, Databases, Probability and Statistics, Linear Algebra, Calculus, Signals and Systems

Publications

Sinha, J., Bhattacharya, P., & Agarwal, A. (2025). Gesture recognition for emergencies: Dataset and cross-condition analysis. *2025 IEEE 19th International Conference on Automatic Face and Gesture Recognition (FG)*, 1–6. https://doi.org/10.1109/FG61629.2025.11099316

Internships

- **Research Intern** *September 2024 – January 2025*
  Trustworthy BiometraVision Lab, IISER Bhopal *Certificate*
  - Created a 1,000+ video gesture recognition dataset across diverse environments/devices, enabling robust detection of five dynamic emergency gestures by Indian participants.
  - Implemented and benchmarked SOTA deep learning models (ViViT, VGG-LSTM, MobileNetV2-LSTM), analyzing performance under varying lighting and device quality.
  - Co-authored a peer-reviewed paper at FG2025.

- **Summer Intern** *May 2025 – August 2025*
  Advanced Signal and Image Processing Lab, IISER Bhopal
  - Designed deep learning models to colorize near-infrared (NIR) images into RGB outputs.
  - Explored GAN-based methods with varied generator architectures and custom loss functions.
  - Focused on balancing perceptual quality with computational efficiency for real-world deployment.

Personal Projects

- **Graph-Based Makeup Transfer using GCNs** *PyTorch Geometric, GCNs, CV*
  GitHub
  - Built a facial landmark–graph model combining histogram matching with GCN refinement for smooth, structure-aware makeup transfer.
  - Designed cross-face and intra-face message passing for stable color propagation across lips and eyes.

- Trained on the MT dataset; evaluated through a 54-user study with an average score of 4.9/10; suggesting rooms for improvement.

* **Face Recognition** *Python, Scikit-learn, Computer Vision*
(GitHub)
  - Built a face recognition pipeline using the Yale Face Database by extracting hand-crafted features and training traditional machine learning models.
  - Gained hands-on experience using classical approaches with image preprocessing, feature engineering, and model evaluation.

Skills & Tools

* **Programming:** Python
* **Machine Learning & Deep Learning:** scikit-learn, PyTorch, PyTorch Geometric
* **Data Analysis & Visualization:** NumPy, Pandas, Matplotlib, OpenCV
* **Tools:** Git, Jupyter