Nitish Shukla

PhD Student in Computer Science

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Professional summary

Second year PhD student specializing in biometric security and LLM preference optimization, with a strong academic foundation in mathematics and balanced experience across industry and academia. Pioneered state-of-the-art methods in Face Demorphing and morph attack detection, developing unified pipelines across biometric modalities for high reliability and real-world usability. Skilled in GANs, diffusion models, LLM, and transformers, with a focus on advancing secure, robust biometric technology.

Links

Portfolio:
nitishshukla86.github.io,

LinkedIn: linkedin.com,

Google Scholar:
scholar.google.com.

Skills

Face Biometrics *(Experienced)*,

Deep Learning *(Experienced)*,

Computer Vision
(Experienced),

Adversarial ML *(Skillful)*,

Bayesian Theory,

Graph Theory,

Mathematics,

PyTorch,

Scikit-learn,

OpenCV,

MLFlow,

Pandas,

LLM Planning *(Skillful)*.

References

Arun Ross, Michigan State University
(rossarun@msu.edu),

K.V. Subramanayam, CMI
(kv@cmi.ac.in, +91 9445 390 492),

Sudipta Banerjee, IIIT-H
(sudipta.b@iiit.ac.in).

Employment history

PhD Intern, May 2024 - Aug 2024
Adobe Systems
- Investigated effects of mutable text embedding in text-to-image generation.
- Planning via LLMs: Employed LLMs to generate plans executing various simulated tasks.

Data Scientist II, Aug 2022 - Aug 2023
Micron Technology
- Developed a Root Cause Identification pipeline to reduce manual SME intervention by 90%.
- Developed a synthetic data generation pipeline for wafer pattern recognition increasing classification accuracy by 13%.

R&D Engineer, May 2019 - Aug 2020
Next Education
- Developed a standalone offline Handwriting Recognition tool based on CNN and RNN architecture to produce transcripts of notes written on an electronic white board.
- Designed and developed a Data-Warehouse and ETL pipeline using Apache-Airflow.

Research Publications

•**Nitish Shukla**, Arun Ross, "dc-GAN: Dual-Conditioned GAN for Face Demorphing From a Single Morph", In Proceedings of IEEE International Conference on Automatic Face and Gesture Recognition (FG), 2025.

•**Nitish Shukla**, Arun Ross, "Metric for Evaluating Performance of Reference-Free Demorphing Methods", In Proceedings of IEEE/CVF Winter Conference on Applications of Computer Vision Workshops (WACVW), 2025.
•**Nitish Shukla**, Arun Ross, "Face Demorphing via Identity Preserving Image Decomposition", In Proceedings of IEEE International Joint Conference on Biometrics (IJCB), 2024.
•**Nitish Shukla**, Sudipta Banerjee, "Generating Adversarial Attacks in Latent Space", In Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2023.
•**Nitish Shukla**, "SDeMorph : Towards Better Component Face Extraction from Single Morph", In Proceedings of IEEE International Joint Conference on Biometrics (IJCB), 2023
•**Nitish Shukla**, Arun Ross,"Privacy Preserving Facial Demorphing", Under Review, 2024.
•**Nitish Shukla**, Arun Ross,"SDMorph++ : Extending demorphing on unseen faces", Under Review, 2024

Education

PhD in Computer Science, Jan 2024 - Present
Michigan State University, MI, USA
Working on single image reference free demorphing methods with Prof. Arun Ross.

Master of Science in Computer Science, Dec 2020 - Jun 2022
Chennai Mathematical Institute, Chennai, India

Master of Science in Mathematics, Jul 2017 - Jun 2019
Indian Institute of Technology (IIT), Guwahati, Guwahati, India