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.

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,"Metric for Evaluating Performance of Reference-Free Demorphing Methods", In Proceedings of IEEE/CVF Winter Conference on Applications of Computer Vision Workshops (WACVW), Feb 2025.
•**Nitish Shukla**, Arun Ross,"Face Demorphing via Identity Preserving Image Decomposition", In Proceedings of IEEE International Joint Conference on Biometrics (IJCB), Sep 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) , Apr 2023.
•**Nitish Shukla**, "SDeMorph : Towards Better Component Face Extraction from Single Morph", In Proceedings of IEEE International Joint Conference on Biometrics (IJCB), Aug 2023
•**Nitish Shukla**, Arun Ross,"dc-GAN: Dual-Conditioned GAN for Face Demorphing From a Single Morph", arXiv preprint arXiv:2411.14494, Sep 2024.
•**Nitish Shukla**, Arun Ross,"Privacy Preserving Facial Demorphing", Under Review, Sep 2024.
•**Nitish Shukla**, Arun Ross,"SDMorph++ : Extending demorphing on unseen faces", Under Review, Sep 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