Shanthika Naik

shanthika.naik26@gmail.com | LinkedIn | GitHub | Google Scholar | Website

Education

MS in Computer Science — Hyderabad, Telangana
International Institute of Information Technology, Hyderabad — *2020 - 2023*
CGPA: **8.86**

BE in Computer Science — Hubli, Karnataka
KLE Technological University — *2016 - 2020*
CGPA: **8.75**

Research Experience

IIT, Jodhpur — Jodhpur, India
Senior Research Fellow — *July 2024- Present*
Currently working on Neural cloth simulation to speed up and overcome the limitations of classical simulation methods.

VCAI, MPI Informatik — Saarland, Germany
Internship — *October 2023 – March 2024*
Worked on modeling contact friction as a soft constraint in neural cloth simulation, and explored different ways to speed up training convergence.

SGI (Summer Geometric Initiative) — MIT, USA
Internship — *August 2023 – September 2023*
The internship involved a week-long lecture series on the basics of geometric processing by experts in the field followed by projects. Here are the projects that I worked on: Random Meshes , Cloth simulation and Brain Surface analysis.

Samsung Research Institute — Banglore, India
PRISM Program — *Aug. 2018 – May 2019*
Worked on Multiple Object Detection and Tracking on 360° Videos, in collaboration with SRI, Bangalore. This project culminated in a research paper.

IIT Delhi — Delhi, India
Summer Intern — *May 2018*
Worked on 'Federated Learning'. The project aimed to explore decentralized learning, by aggregating parameter updates of different models, trained with different images for the same set of classes. This would help eliminate the need for data accumulation and centralized training, resulting in efficient utilization of memory and computational power, and also help achieve data privacy.

Publications

Dress Me Up: A Dataset and Method for Self-Supervised 3D Garment Retargeting
Shanthika Naik, Kunwar Singh, Astitva Srivastava, Dhawal Sirikonda, Amit Raj, Varun Jampani and Avinash Sharma.
ArXiv

Discretization-Agnostic Deep Self-Supervised 3D Surface Parameterization
Chandradeep Pokhariya, Shanthika Naik*, Astitva Srivastava, Avinash Sharma.*
In SIGGRAPH ASIA, Technical Communications, 2022.

Deep Generative Framework for Interactive 3D Terrain Authoring and Manipulation
Shanthika Naik, Aryamaan Jain, Avinash Sharma, and KS Rajan.
In IGARSS, 2022.

FeatureNet: Upsampling of Point Cloud and its Associated Features
Shanthika Naik, Uma Mudengudi, Ramesh Tabib, and Adarsh Jamadandi.
In SIGGRAPH Asia 2020 (SA '20 Posters), December 04-13, 2020.

Multiple Object Detection in 360° Videos for Robust Tracking
V. Vineeth Kumar, Shanthika Naik, Polisetty Sarvani, Shreya M Pattanshetti, Uma Mudengudi, Meena Maralappanavar, Priyadarshini Patil, Ramesh Tabib, and Basavaraja SVandrotti.
In Pattern Recognition and Machine Intelligence, 2019.

Patents

System and Method for Determining Two-Dimensional Patches of Three-Dimensional Object Using Machine Learning Models
Avinash Sharma, Chandradeep Pokhariya, ***Shanthika Naik****, Astitva Srivastava*
US Patent, 2024

Teaching Experience

Teaching and Mentoring CV projects - Talentsprint
The audience is mainly employees of the industry from various domains Systems, Applications, and Testing, trying to adapt to new ML/CV pipelines

Teaching Assistant at SGI 2024, MIT
Volunteered for two projects: Spline Construction with Closed-form Arc-Length Solution and Loop Subdivision for Tetsphere Splatting and helped students with concepts, code and provided relevant resources.

Volunteer at 3D Vision Workshop, IIITH
Handled the lab sessions focusing on implementing the fundamental concepts of 3D vision and state-of-the-art papers on human body reconstruction.

Volunteer at Samsung R&D, Bangalore as part of Drishti Foundation
Handled the lab sessions as a part of the 2-day workshop and covered the basics of Image Processing. The participants were employees from the Samsung R&D office.

Teaching Assistant
TA for the course *Statistical Methods in AI* at IIITH. The audience is mainly graduate and undergraduate students.

Awards & Achievements

First Place, Smart India Hackathon - 2019, Software Edition
For the project "Real Time Multiple Person Detection, Identification and Tracking on CCTV camera footage."

Reaserch Week at Google
Inivited for a three day workshop by **Google**, India.

Reviewer at ICVGIP- 2022, WACV-2024

Technical Skills

Languages: Python, C, Java.
Libraries and Frameworks: PyTorch, TensorFlow, Keras, scikit-learn, tinycudann, pandas, matplotlib.
Relevant Courses: Image Processing, Computer Vision, Computer Graphics, Statistical Methods in AI, Optimisation Methods, Data Structures and Algorithms.
Other Tools: Blender, Git, Linux