Saarland Informatics Campus
66123 Saarbrücken
Germany

Navami Kairanda

PhD Candicate

✉ *nkairand@mpi-inf.mpg.de*
people.mpi-inf.mpg.de/~nkairand

Research Interests

3D Computer Vision; Computer Graphics; Geometric Modelling; Machine Learning; Artificial Intelligence

Education

03/2022 – present **Max Planck Institute for Informatics and Saarland University**, Saarbrücken, Germany.
Doctor of Engineering (Dr.-Ing.)
Thesis: "Physics-based Reconstruction of Dynamic Real-world Scenes" [2, 3, 1]
Supervisors: Prof. Christian Theobalt and Dr. Vladislav Golyanik
Member of the 4D and Quantum Computer Vision Group

04/2019 – 02/2022 **Saarland University**, Saarbrücken, Germany.
Master of Science in Visual Computing
Grade: 1.2 (Best grade: 1)
Thesis: "ϕ-SfT: Shape-from-Template with a Physics-Based Deformation Model" [4]
Supervisors: Prof. Christian Theobalt and Dr. Vladislav Golyanik

07/2011 – 05/2015 **National Institute of Techonology Karnataka**, Surathkal, India.
Bachelor of Technology in Information Technology
Grade: 8.45 (Best grade: 10)
Thesis: "Prediction of Forest Cover Type using Ensemble of Decision Trees" [5]
Supervisor: Prof. Biju R Mohan

Research Experience

09/2020 – 07/2021 **Max Planck Institute for Informatics**, Saarbrücken, Germany.
Student Research Assistant with Prof. Christian Theobalt and Dr. Mohamed Elgharib
Assistance in building a full head volumetric 3D morphable model from multi-view images

08/2019 – 01/2020 **Max Planck Institute for Informatics**, Saarbrücken, Germany.
Student Research Assistant with Prof. Gerard Pons-Moll
Assistance in building SIZER: a dataset and model for parsing and learning size sensitive 3D clothing. Built a dataset of full photogrammetric head scans of subjects in varied facial expressions and a dataset of clothing size variation of subjects wearing different garment classes. The datasets captured were used in papers published at ECCV 2020 and CVPR 2021

05/2014 – 07/2014 **Samsung Research & Development Institute India**, Bangalore, India.
Research Intern
Driving event recognition system using smartphone sensor data to provide an effective and inexpensive approach to driving behaviour understanding

Work Experience

02/2017 – 02/2019 **Citicorp Services India**, Pune, India.
Manager (App Dev Programmer and Analyst - II)
Financial Action Task Force (FATF) regulatory requirements for Citi's global payment systems.
Liquidity check and management solution as part of Citi's strategic payment infrastructure upgrade project for 60 countries

07/2015 – 01/2017 **Citicorp Services India**, Pune, India.
Assistant Manager (App Dev Programmer and Analyst - I)
Application AutoFX that facilitates payment processors to determine whether there is a foreign exchange opportunity or not, thus increasing Citi's foreign exchange revenue

05/2013 – 07/2013 **Career Breeder**, Bangalore, India.
Student Intern
Android application 'Career Breeder Assessment Test' for career planning based on personality, aptitude and interests

Awards & Honours

09/2017 **Individual Award for Significant Contribution**.
For technical contributions to Citi Service Centre, Pune, India that made a significant difference in Quarter 3, 2017

11/2014 **Best Technical Poster Award**.
'Inferring Driving Behavior using Smartphones' at Grace Hopper Celebration of Women in Computing India(GHCI) Conference

07/2011 – 05/2015 **Central Sector Scholarship**.
Financial assistance to meritorious students by the Department of Higher Education, Government of India for pursuing university studies

05/2011 **Certificate of Merit by Central Board of Secondary Education**.
For outstanding academic performance and being among the top 0.1 percent of successful candidates of All India Senior School Certificate Examination in Mathematics

Other Projects

- A physically based renderer using ray tracing as well as global illumination methods such as path tracing, and photon mapping - [link for details]
- Discrete conformal parameterization of surfaces with boundary constraint- [link for details]
- Semantic segmentation of PascalVOC and Cityscapes datasets using Fully Convolutional Network, U-Net, Recurrent Residual Convolutional Neural Network(R2U-Net) and DeepLabV3 - [link for details]
- Tracking effective reproduction number R of COVID-19 using Kalman Filter- [link for details]
- Addition of Kappa pruning algorithm to a decision tree library C5.0 in R programming language - [link for details]
- A fast method to find trainable sparse network within a dense neural network using data subset- [link for details]
- A music system based on emotion recognition from facial expressions- [link for details]

Technical Skills

Programming C++, Python, C, Matlab, Java, R
Deep Learning PyTorch, TensorFlow
Others OpenGL, CMake, LATEX, Android App Development, Oracle Database, MongoDB

Teaching

Tutor **Eurographics**, Saarbrücken, Germany.
Tutorial on Monocular Non-Rigid 3D Reconstruction, 2023

Teaching Assistant **Max Planck Institute for Informatics and Saarland University**, Saarbrücken, Germany.
Seminars:
- Classical Concepts of Computer Vision and Computer Graphics in the Neural Age (Summer 2024)
- Computer Vision and Machine Learning for Computer Graphics (Summer 2023, Summer 2022)

Academic Services

Reviewing **Conferences**.
- Computer Vision and Pattern Recognition (CVPR) 2024, 2025

Reviewing **Journal**.
- Transactions on Visualization and Computer Graphics (TVCG) 2023
- Computer Vision and Image Understanding (CVIU) 2023

Supervised Students

Max Planck Institute for Informatics.
Shanthika Naik (2024), Takuya Nakabayashi (2025)

Languages

English (fluent), Hindi (fluent), Kannada (native), German (basic)

Publications

* indicates equal contribution

[1] **Navami Kairanda**, Marc Habermann, Shanthika Naik, Christian Theobalt, and Vladislav Golyanik. Thin-shell-sft: Fine-grained monocular non-rigid 3d surface tracking with neural deformation fields. In *Computer Vision and Pattern Recognition (CVPR)*, 2025.

[2] **Navami Kairanda**, Marc Habermann, Christian Theobalt, and Vladislav Golyanik. Neuralclothsim: Neural deformation fields meet the kirchhoff-love thin shell theory. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.

[3] Edith Tretschk*, **Navami Kairanda***, Mallikarjun B R, Rishab Dabral, Adam Kortylewski, Bernhard Egger, Marc Habermann, Pascal Fua, Christian Theobalt, and Vladislav Golyanik. State of the art in dense monocular non-rigid 3d reconstruction. *Computer Graphics Forum (Eurographics State of the Art Reports)*, 2023.

[4] **Navami Kairanda**, Edith Tretschk, Mohamed Elgharib, Christian Theobalt, and Vladislav Golyanik. ϕ-sft: Shape-from-template with a physics-based deformation model. In *Computer Vision and Pattern Recognition (CVPR)*, 2022.

[5] Pruthvi H.R*, Nisha K.K*, Chandana T.L*, **Navami Kairanda***, and Biju R M. Feature engineering on forest cover type data with ensemble of decision trees. In *2015 IEEE International Advance Computing Conference (IACC)*, 2015.

Last updated: March 10, 2025