

Uday Kusupati

Ph.D. Candidate - Expected Jul 2025
School of Computer and Communication Sciences,
Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

uday.kusupati@epfl.ch
+41 768174788
udaykusupati.github.io

EDUCATION

Swiss Federal Institute of Technology Lausanne (EPFL)

Oct 2020 - Jul 2025

Ph.D. in Computer Science, Advisor: Prof. Mark Pauly

The University of Texas at Austin

Aug 2018 - May 2020

Master's in Computer Science, GPA: 4.0/4.0

Indian Institute of Technology Bombay

Jul 2014 - May 2018

B.Tech (Honours) in Computer Science and Engineering with Minor in Mathematics, GPA: 9.0/10.0

PUBLICATIONS

7. Computational Design of a Kit of Parts for Bending-Active Structures

Uday Kusupati*, Quentin Becker*, Seiichi Suzuki, Mark Pauly
ACM Transactions on Graphics (SIGGRAPH Asia), 2024 (* joint first author)

6. Semantic Shape Editing with Parametric Implicit Templates

Uday Kusupati, Mathieu Gaillard, Jean-Marc Thiery, Adrien Kaiser
Proceedings of SIGGRAPH Conference Papers, 2024

5. Computational Homogenization for Inverse Design of Surface-based Inflatables

Yingying Ren, Julian Panetta, Seiichi Suzuki, Uday Kusupati, Florin Isvoranu, Mark Pauly
ACM Transactions on Graphics (SIGGRAPH North America), 2024

4. RUM: Reconfigurable Umbrella Mesh

Uday Kusupati, Florin Isvoranu, Seiichi Suzuki, Mark Pauly
Advances in Architectural Geometry (AAG), 2023

3. Umbrella Meshes: Elastic Mechanisms for Freeform Shape Deployment

Uday Kusupati*, Yingying Ren*, Julian Panetta, Florin Isvoranu, Davide Pellis, Tian Chen, Mark Pauly
ACM Transactions on Graphics (SIGGRAPH North America), 2022 (* joint first author)
Best Paper Award Honorable Mention

2. Normal Assisted Stereo Depth Estimation

Uday Kusupati, Shuo Cheng, Rui Chen, and Hao Su
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020

1. Learning 3D Human Pose from Structure and Motion

Rishabh Dabral, Anurag Mundadha, Uday Kusupati, Safeer Afaque, Abhishek Sharma, and Arjun Jain
The European Conference on Computer Vision (ECCV), 2018.

RESEARCH EXPERIENCE

Geometric Computing Laboratory, EPFL

Oct 2020 - Present

Ph.D. Candidate - Advisor: Prof. Mark Pauly

Lausanne, CH

- Computational frameworks for design, optimization and rationalization of bending-active and deployable structures
- Inverse design and exploration of shape-morphing structures like umbrella meshes, inflatables and kirigami
- Designing reconfigurable and re-usable adaptations of deployable structures for sustainable architectural practices

Smart Geometry Processing Group

Aug 2024 - Oct 2024

Visiting Researcher - Advisor: Prof. Niloy J. Mitra

London, UK

- Exploring continuous adaptive shape representations for solving PDEs and simulation

Adobe Research

July 2022 - Sep 2022

Research Intern - Advisors: Dr. Adrien Kaiser, Prof. Jean-Marc Thiery

Paris, FR

- A novel approach for deforming meshes semantically by coupling parametric implicit templates

Media Analytics, NEC Laboratories America

May 2020 - Aug 2020

Research Intern - Advisors: Dr. Buyu Liu, Prof. Manmohan Chandraker

San Jose, CA

- A parametric representation for holistic indoor scene understanding and reconstruction (patent filed at the USPTO)

SU Lab, University of California San DiegoVisiting Researcher - Advisor: [Prof. Hao Su](#)*May 2019 - Aug 2019*

San Diego, CA

- A deep-learning framework to captures an implicit understanding of surface normal information as well as enforce depth-normal consistency for improved stereo depth estimation

The University of Texas at AustinGraduate Researcher - Advisor: [Prof. Qixing Huang](#)*Jan 2019 - May 2019*

Austin, TX

- Leveraging language based supervision for 3D Human Pose estimation in noisy and ill-posed scenarios.
- An approach for topology aware single-view mesh reconstruction and polygon-based image segmentation.

Indian Institute of Technology BombayUndergraduate Researcher - Advisor: [Prof. Siddhartha Chaudhuri](#)*Jan 2017 - May 2018*

Mumbai, IN

- Scene parsing and reconstruction with stochastic grammars and recursive neural networks.
- Inverse design of furniture optimized to specific affordance measures

Indian Institute of Technology BombayUndergraduate Researcher - Advisor: [Prof. Arjun Jain](#)*Jul 2017 - May 2018*

Mumbai, IN

- A semi-supervised learning method using a structure-aware loss function along with a temporal network for 3D Human Pose Estimation in real-time

Samsung Research Korea

Research Intern - Advisor: Dr. Inkwon Choi

May 2017 - Jul 2017

Seoul, KR

- Worked on resource-efficient object recognition algorithms for an automated robot cleaner

DATASHAPE team, Inria Sophia AntipolisResearch Intern - Advisor: [Dr. Jean-Daniel Boissonnat](#)*May 2016 - Jul 2016*

Sophia Antipolis, FR

- Worked on implementing a probabilistic approach to reduce algebraic complexity of Delaunay Triangulations

SELECTED AWARDS AND HONORS

- SIGGRAPH North America 2022 Technical Papers: **Best Paper Award** Honorable Mention *2022*
- EPFL IC Distinguished Service Award *2021, 2022*
- EPFL EDIC Fellowship *2020 - 2021*
- **All India Rank 11** in JEE Advanced (IIT-JEE) 2014 among 150,000 students qualified from 1.5 million *2014*
- **AP Grade** for exceptional performance in Engineering Graphics & Drawing, IIT Bombay *2014*
- KVPY Fellowship, Government of India *2013*

TALKS

- *Technical Paper Presenter*, **ACM SIGGRAPH North America 2024**, Denver, USA *2024*
- *Invited Speaker*, **University College London**, London, UK *2024*
- *Invited Speaker*, **University of Washington**, Seattle, USA *2024*
- *Invited Speaker*, **University of Edinburgh**, Edinburgh, Scotland *2024*
- *Paper Presenter*, **AAG 2023**, Stuttgart, Germany *2023*
- *Invited Technical Paper Presenter*, **IEEE VIS 2022**, Oklahoma City, USA *2022*
- *Contributed talks presenter*, **Graphyz 2**, Saline Royale d'Arc-et-Senans, France *2022*
- *Technical Paper Presenter*, **ACM SIGGRAPH North America 2022**, Vancouver, Canada *2022*
- *Paper Presenter*, **IEEE CVPR 2020**, Seattle, USA *2020*

PROFESSIONAL SERVICE

- Reviewer for SIGGRAPH, CVPR *2025*
- Reviewer for ECCV *2024*
- Reviewer for Computer Graphics Forum *2023*
- Prefiltering graduate applications for the EPFL EDIC Committee *2023*
- Student Member on UT Austin CS Masters Admissions Committee *2020*
- Committee Member, EPIC, PhD association of EPFL IC *2020-2024*
- Memberships Secretary, Cossonay Cricket Club, Switzerland *2024, 2025*

TEACHING EXPERIENCE

- **EPFL**

- Geometric Computing (Fall 2021, 2022, 2024)
- The GCMaker Project (Spring 2023)
- Advanced information, computation and communication (Fall 2023)
- Theory of Computation (Spring 2021, 2022)

- **UT Austin**

- Computer Graphics (Spring 2020)
- Natural Language Processing (Fall 2019)
- Computer Graphics Honors (Spring 2019)

- **IIT Bombay**

- Computer Programming and Utilisation (Spring 2018, Fall 2017)
- Data Structures and Algorithms (Spring 2017)

MENTORSHIP

- Dusan Cvijetic (Masters student, EPFL), Topic: Fabrication-aware Design of Elastic Rod-Sheet Hybrids *Ongoing*
- Antoine Tran (Masters student, EPFL), Topic: Latent Space Physical Simulation *2024*
- Davor Dobrota (Masters student, EPFL), Topic: Inverse Design of Nonlinear Springs *2024*
- Fabio Lourenco (Masters student, EPFL), Topic: Optimization of curve networks for Stretchable Implants *2024*
- Mathilde Simoni (Masters student, EPFL), Topic: Latent Space Physical Simulation *2024*
- Jae-Yoon Cha (Exchange student, EPFL), Topic: Shape Space of Tensioned Fabrics with Polygonal Patches *2023*
- Danila Zubko (Masters student, EPFL), Topic: Latent Space Physical Simulation *2023*
- Paul Keller (Masters student, EPFL), Topic: Actuation of Umbrella-Meshes *2022*
- Hang Yin (Undergraduate student, CMU), Topic: Interactive Surface Parametrization *2021*
- EPFL RAMP Mentor *2023, 2024*
- SIGGRAPH RCDG Gradschool Application Mentor *2021, 2022*
- Department Academic Mentor, CSE, IIT Bombay *2017-18*