

# Uday Kusupati

Assistant Professor / Faculty Fellow

Courant Institute School of Mathematics, Computing, and Data Science  
New York University

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## EDUCATION

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**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

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### 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, Saefer Afaque, Abhishek Sharma, and Arjun Jain

*The European Conference on Computer Vision (ECCV)*, 2018.

## RESEARCH EXPERIENCE

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### Smart Geometry Processing Group

*Aug 2024 - Oct 2024*

Visiting Researcher - Advisor: Prof. Niloy J. Mitra

London, UK

- Explored 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 semantic mesh deformation using parametric implicit templates (patent filed at the USPTO)

### 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 Diego

*May 2019 - Aug 2019*

Visiting Researcher - Advisor: Prof. Hao Su

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 Austin** *Jan 2019 - May 2019*  
 Graduate Researcher - Advisor: Prof. Qixing Huang 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 Bombay** *Jan 2017 - May 2018*  
 Undergraduate Researcher - Advisor: Prof. Siddhartha Chaudhuri 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 Bombay** *Jul 2017 - May 2018*  
 Undergraduate Researcher - Advisor: Prof. Arjun Jain 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** *May 2017 - Jul 2017*  
 Research Intern - Advisor: Dr. Inkwon Choi Seoul, KR
- Worked on resource-efficient object recognition algorithms for an automated robot cleaner
- DATASHAPE team, Inria Sophia Antipolis** *May 2016 - Jul 2016*  
 Research Intern - Advisor: Dr. Jean-Daniel Boissonnat Sophia Antipolis, FR
- Worked on implementing a probabilistic approach to reduce algebraic complexity of Delaunay Triangulations

## SELECTED AWARDS AND HONORS

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- Swiss National Science Foundation (SNSF) Postdoc.Mobility Fellowship *2025*
- 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

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- *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

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- Reviewer for CVPR *2026*
- Reviewer for SIGGRAPH, CVPR, ICCV, SIGGRAPH Asia, ACM SCF, TVCG *2025*
- Reviewer for ECCV, ICRA *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

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- **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

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- Dusan Cvijetic (Masters student, EPFL), Topic: Fabrication-aware Design of Elastic Rod-Sheet Hybrids *2025*
- 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 RCDC Gradschool Application Mentor *2021, 2022*
- Department Academic Mentor, CSE, IIT Bombay *2017-18*