Haofei Xu

PhD student, CVG, ETH Zurich and AVG, University of Tübingen

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Education

ETH Zurich and University of Tübingen **Switzerland, Germany**
PhD student in Computer Science *Jan 2023 - Sep 2026*
Supervisor: Prof. Marc Pollefeys & Andreas Geiger
Research Topics: 3D/4D Reconstruction and Generation, Visual Synthesis, Motion Estimation

University of Science and Technology of China (USTC) **China**
MSc in Computational Mathematics *Sep 2017 - Mar 2021*
Supervisor: Prof. Juyong Zhang
Research Topics: Depth Estimation, Stereo Matching, Optical Flow
Thesis: Efficient and Accurate Depth Estimation from Images

Nanjing University of Aeronautics and Astronautics (NUAA) **China**
BSc in Information and Computing Science *Sep 2013 - Jun 2017*
Focus: Computational Mathematics, Computer Science, Machine Learning

Experience

Google **Switzerland**
Student Researcher *Jul 2025 - Jan 2026*
Host: Dr. Michael Niemeyer & Federico Tombari
Project: 3D Generation
Developed a minimalist diffusion model for 3D generation, leading to a paper submission currently under review.

Univeristy of Tübingen and MPI for Intelligent Systems **Germany (remote)**
Research Assistant *Jun 2022 - Dec 2022*
Supervisor: Prof. Andreas Geiger
Project: Unifying Flow, Stereo and Depth Estimation
Developed a unified framework for flow, stereo and depth estimation, which was accepted by TPAMI.

Monash University **Australia (remote)**
Research Assistant *May 2020 - Jun 2022*
Supervisor: Prof. Jianfei Cai & Hamid Rezatofighi
Project: Multi-View Geometric Perception from Images and Videos
Worked on multi-view geometry related tasks (optical flow, video depth and stereo matching) and published two Oral presentation papers: ICCV 2021 and CVPR 2022.

JD Explore Academy, JINGDONG **China**
Algorithm Engineer *Jul 2021 - Jun 2022*
Mentor: Dr. Jing Zhang & Dacheng Tao
Project: Learning Optical Flow
Developed a new global matching-based optical flow model, which was accepted by CVPR 2022 as an Oral presentation.

Visual Computing Group, ByteDance **China**
Research Intern *Dec 2020 - Jul 2021*
Mentor: Dr. Ke Li
Project: Dynamic Video Depth Estimation
Developed a new recurrent model for estimating depth from dynamic videos, and achieved good results on diverse datasets with dynamic scenes.

Visual Computing Group, Microsoft Research Asia (MSRA) **China**
Research Intern *May 2020 - Dec 2020*
Mentor: Dr. Jiaolong Yang & Xin Tong
Project: Learning High-Resolution Optical Flow
Developed an optical flow model for high-resolution videos, enabling optical flow estimation at $4K+$ resolution. The work was accepted as an Oral presentation at ICCV 2021.

Nanyang Technological University (NTU) **Singapore**
Exchange Student *Jul 2018 - Jan 2019*
Supervisor: Prof. Jianfei Cai & Jianmin Zheng
Project: Unsupervised Depth Estimation from Monocular Videos
Developed a bicubic motion representation for modeling dynamic objects, leading to improved results on dynamic scenes. This project was accepted by IJCAI 2019.

Selected Publications (Google Scholar)

Haofei Xu, Rundi Wu, Philipp Henzler, Nikolai Kalischek, Michael Oechsle, Fabian Manhardt, Marc Pollefeys, Andreas Geiger, Federico Tombari, Michael Niemeyer. PointDiT: Pixel-Space Diffusion for Monocular Geometry Estimation. 2026 (Under Review)

Haofei Xu, Daniel Barath, Andreas Geiger, Marc Pollefeys. ReSplat: Learning Recurrent Gaussian Splatting. arXiv 2026 (Under Review)

Dingxi Zhang, Fangjinhua Wang, Marc Pollefeys, **Haofei Xu**. MegaFlow: Zero-Shot Large Displacement Optical Flow. arXiv 2026 (Under Review)

Botao Ye, Boqi Chen, **Haofei Xu**, Daniel Barath, Marc Pollefeys. YoNoSplat: You Only Need One Model for Feedforward 3D Gaussian Splatting. **ICLR** 2026

Frano Rajič, **Haofei Xu**, Marko Mihajlovic, Siyuan Li, Irem Demir, Emircan Gündoğdu, Lei Ke, Sergey Prokudin, Marc Pollefeys, Siyu Tang. Multi-View 3D Point Tracking. **ICCV** 2025 (**Oral**)

Jan Ackermann, Jonas Kulhanek, Shengqu Cai, **Haofei Xu**, Marc Pollefeys, Gordon Wetzstein, Leonidas Guibas, Songyou Peng. CL-Splats: Continual Learning of Gaussian Splatting with Local Optimization. **ICCV** 2025

Haofei Xu, Songyou Peng, Fangjinhua Wang, Hermann Blum, Daniel Barath, Andreas Geiger, Marc Pollefeys. DepthSplat: Connecting Gaussian Splatting and Depth. **CVPR** 2025

Cheng Zhang, **Haofei Xu**, Qianyi Wu, Camilo Cruz Gambardella, Dinh Phung, Jianfei Cai. PanSplat: 4K Panorama Synthesis with Feed-Forward Gaussian Splatting. **CVPR** 2025

Botao Ye, Sifei Liu, **Haofei Xu**, Xueting Li, Marc Pollefeys, Ming-Hsuan Yang, Songyou Peng. No Pose, No Problem: Surprisingly Simple 3D Gaussian Splats from Sparse Unposed Images. **ICLR** 2025 (**Oral**)

Yuedong Chen, Chuanxia Zheng, **Haofei Xu**, Bohan Zhuang, Andrea Vedaldi, Tat-Jen Cham, Jianfei Cai. MVSplat360: Feed-Forward 360 Scene Synthesis from Sparse Views. **NeurIPS** 2024

Yuedong Chen, **Haofei Xu**, Chuanxia Zheng, Bohan Zhuang, Marc Pollefeys, Andreas Geiger, Tat-Jen Cham, Jianfei Cai. MVSplat: Efficient 3D Gaussian Splatting from Sparse Multi-View Images. **ECCV** 2024 (**Oral**)

Anpei Chen, **Haofei Xu**, Stefano Esposito, Siyu Tang, Andreas Geiger. LaRa: Efficient Large-Baseline Radiance Fields. **ECCV** 2024

Haofei Xu, Anpei Chen, Yuedong Chen, Christos Sakaridis, Yulun Zhang, Marc Pollefeys, Andreas Geiger,

Fisher Yu. MuRF: Multi-Baseline Radiance Fields. **CVPR** 2024

Haofei Xu, Jing Zhang, Jianfei Cai, Hamid Rezatofighi, Fisher Yu, Dacheng Tao, Andreas Geiger. Unifying Flow, Stereo and Depth Estimation. **TPAMI** 2023

Haofei Xu, Jing Zhang, Jianfei Cai, Hamid Rezatofighi, Dacheng Tao. GMFlow: Learning Optical Flow via Global Matching. **CVPR** 2022 (**Oral**)

Haofei Xu, Jiaolong Yang, Jianfei Cai, Juyong Zhang, Xin Tong. High-Resolution Optical Flow from 1D Attention and Correlation. **ICCV** 2021 (**Oral**)

Wanquan Feng, Juyong Zhang, Hongrui Cai, **Haofei Xu**, Junhui Hou, Hujun Bao. Recurrent Multi-view Alignment Network for Unsupervised Surface Registration. **CVPR** 2021

Haofei Xu, Juyong Zhang. AANet: Adaptive Aggregation Network for Efficient Stereo Matching. **CVPR** 2020

Invited Talks

Learning to Optimize 3D Gaussian Splatting, Huawei	*Mar 9, 2026*
Multi-View 3D Point Tracking, Google DeepMind	*Sep 29, 2025*
Learning to Splat, Huawei	*Jun 3, 2025*
DepthSplat: Connecting Gaussian Splatting and Depth, Google DeepMind	*Oct 29, 2024*
Unifying Flow, Stereo and Depth Estimation, Synced	*Dec 28, 2022*
Learning Optical Flow via Global Matching, Monash University	*Apr 13, 2022*

Teaching

Head Teaching Assistant, 3D Vision, Spring 2026
Head Teaching Assistant, 3D Vision, Spring 2025
Teaching Assistant, Computer Vision, Fall 2024
Teaching Assistant, Stochastics and Machine Learning, Spring 2024

Academic Services

- Conference Reviewer: ICCV 2021, CVPR 2022, ECCV 2022, CVPR 2023, NeurIPS 2023, CVPR 2024, ECCV 2024, NeurIPS 2024, CVPR 2025, ICCV 2025, NeurIPS 2025, CVPR 2026, ICML 2026, ECCV 2026
- Journal Reviewer: TIP, IJCV, TPAMI

Awards and Honors

Apple Scholar in AI/ML PhD Fellowship, 2025 (Gift funding of USD 224,000)
Top Reviewer, NeurIPS 2024
Outstanding Reviewer, CVPR 2022
1st place of Argoverse Stereo Challenge, CVPR 2022 Workshop on Autonomous Driving
National Scholarship, 2016