

Lixin Xue

lixxue@ethz.ch | lixxue.github.io | github.com/lixxue

EDUCATION

- ETH Zurich** Since Sept. 2019
- Computer science master student in visual computing track, GPA: 5.88 / 6.0.
 - Thesis: High-Fidelity Neural Head Geometry and Appearance.
 - Research Interests: Digital Humans, Neural Fields.
- Technical University of Munich** Oct. 2017 - Feb. 2018
- Exchange semester, coursework in optimization, algorithms and machine learning, GPA: 1.0 / 1.0.
- Beihang University** Sept. 2015 – June 2019
- B.Eng in Computer Science, graduated with distinction, GPA: 3.84 / 4.0, Rank: 3 / 209.
 - Thesis: Texture-based Black-box Adversarial Attacks on Convolutional Neural Networks.

RESEARCH EXPERIENCE

- Research Assistant, Advanced Interactive Technology Lab, ETH Zurich** Since Oct. 2022
- Worked on human and scene reconstruction, supervised by [Dr. Jie Song](#) and [Prof. Otmar Hilliges](#).
- Master Thesis & Internship, Digital Humans Group, Disney Research** Nov. 2021 - Sept. 2022
- Worked on neural fields for human faces, supervised by [Dr. Paulo Gotardo](#) and [Dr. Derek Bradley](#).
 - Reconstructed high-fidelity neural face geometry and appearance from multiview images.
- Semester Project, Computer Vision and Geometry Group, ETH Zurich** Nov. 2020 - July 2021
- Focused on the disambiguation problem in SfM, supervised by [Paul-Edouard Sarlin](#) and [Mihai Dusmanu](#).
 - Implemented two methods for removing wrong matches and identified their limitations on generalizations.
 - Open-sourced [SfM-Disambiguation-COLMAP](#), a python codebase with extensive experiment evaluations.
- Semester Project, Interactive Geometry Lab, ETH Zurich** Mar. 2020 - Oct. 2020
- Conducted research on the differentiable point renderer, supervised by [Dr. Yifan Wang](#) and [Prof. Cengiz Öztireli](#)
 - Identified bottlenecks in runtime and sped up the differentiable point renderer by 50%.
 - Implemented and open-sourced [FRNN](#), a grid-based fixed radius nearest neighbor search on CUDA.
 - Achieved more than 10x speedup compared to the fastest open-source GPU KNN implementation.
- Research Intern, Visual Computing Group, Microsoft Research Asia** Mar. 2019 – June 2019
- Conducted research on the learning-based image retrieval, supervised by [Dr. Zhirong Wu](#).
 - Explored the correlations between deep features trained for different vision tasks and human notions of similarity.
- Visiting Student, Center for Data Science, Peking University** Oct. 2018 – Mar. 2019
- Bachelor's thesis on the robustness of neural networks, supervised by [Prof. Zhanxing Zhu](#).
 - Designed an algorithm utilizing texture patterns to reduce the number of target model queries.
- Visiting Student, SU Lab, University of California San Diego** Mar. 2018 – Sept. 2018
- Conducted research on 3D deep learning, supervised by [Prof. Hao Su](#).
 - Compared learning algorithms for different 3D data representations in the few-shot and transfer-learning settings.

COURSE PROJECTS

- Road Segmentation on Aerial Images** [[report](#) | [code](#) | [review](#)] Apr. 2020 – July 2020
- Trained a PSPNet-based network with self-supervised learning tasks of road edge and road midline prediction.
 - Designed a direction-based kernel for post-processing the network predictions via conditional random field.
 - Ranked 3rd among 24 teams on the public leaderboard in the Kaggle competitions.
- Sparse-to-dense Feature-metric Camera Localization** [[report](#) | [code](#)] Mar. 2020 – July 2020
- Achieved better localization accuracy on multiple datasets via a feature-metric loss optimized by LM algorithm.
 - Trained the feature maps on pixel correspondences for improved effectiveness of the feature-metric loss.
- Ray Tracing Renderer** [[presentation](#) | [image](#)] Oct. 2019 – Dec. 2019
- Implemented a ray tracer supporting global path tracing, volume rendering and advanced denoising.
 - Ranked 3rd in the 2019 rendering competition at ETH Zurich.

MISCELLANEOUS INFORMATION

Technical Skills: C/C++, CUDA, Python(PyTorch, TensorFlow), Matlab, Linux, Git, LaTeX, Vim
Languages: English (proficient), Chinese (native), German (basic)