

Zimeng Jiang

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EDUCATION

- ETH Zürich** Sept. 2019 - Mar. 2023 (expected)
MSc in Electrical Engineering and Information Technology, GPA: 5.6/6.0 Zürich, Switzerland
- Research Interest: Computer Vision, 3D Geometry, SLAM, Autonomous Driving
 - Courses: Machine Learning, 3D Vision, Embedded Systems, Autonomous Mobile Robots
- Beijing Institute of Technology** Sept. 2015 – June 2019
B.Eng. in Automatic Control, GPA: 4.0/4.0, with distinction Beijing, China

EMPLOYMENT

- Computer Vision Intern, full-time** Since Dec.2021
Sevensense Robotics AG Zürich, Switzerland
- Research Assistant, full-time** June 2021 - Nov. 2021
Computer Vision and Geometry Group, ETH Zürich Zürich, Switzerland
- Conducted research on robust visual SLAM using data of different modalities.
- Research Intern, part-time** Dec. 2018 – May 2019
Institute of Automation, Chinese Academy of Sciences Beijing, China
- Conducted research on facial micro-expression recognition.
- Mitacs Globalink Research Intern, full-time** July 2018 – Oct. 2018
Ontario Tech University Oshawa, Canada
- Designed an image-based visual servoing controller for pose regulation of autonomous robotic systems.

PROJECTS

- Deep Learning for Autonomous Driving** | *Python, PyTorch* Mar. 2021 – June 2021
- Built a multi-task learning framework for semantic segmentation and depth estimation. Achieved the highest rank among 52 participated groups.
- Learning a Better BAD-SLAM** [[Code](#)][[Presentation](#)][[Thesis](#)] | *CUDA, C++, Python, PyTorch* Oct. 2020 – Apr.2021
- Semester thesis on robustifying bundle adjusted direct SLAM (BAD-SLAM) via deep learning and feature-metric optimization, supervised by [Paul-Edouard Sarlin](#), [Viktor Larsson](#), [Martin Oswald](#), [Marc Pollefeys](#).
 - Enlarged the convergence basin of direct image alignment by 50% by densely aligning invariant and compact features computed from a deep neural network trained with supervision on camera pose.
 - Achieved 21% higher AUC score compared with the baseline method and performed well on the [ETH3D benchmark](#) by integrating feature alignment into the front-end pose tracking and the back-end scene geometry optimization. Improved significantly the accuracy and robustness on common failure modes: illumination changes, inaccurate sensor calibration, fast motion, structureless and textureless scenes.
 - Achieved real-time performance using C++ and CUDA.
- Sparse-to-dense Feature-metric Localization** [[Code](#)][[Report](#)] | *Python, PyTorch* Mar. 2020 – July 2020
- Enhanced the long-term localization accuracy on multiple cross-condition datasets by aligning robust and pixel-level accurate features as a post-processing step of a hierarchical localization scheme.
- 3D Human Pose Estimation** [[Code](#)][[Report](#)] | *Python, PyTorch* Mar. 2020 – July 2020
- Designed a two-stage model to predict 3D human pose from a single RGB image. Achieved the highest PA-MPJPE score among 15 participated groups.

SKILLS

Technical: C/C++, Python (PyTorch), CUDA, Matlab, Linux, Git, LaTeX
Languages: English (fluent), Chinese (native), German (beginner)