

Shengjie Zhu

zhusheng@msu.edu | 517-802-7733 | [Homepage](#) | [GoogleScholar](#) | [LinkedIn](#)

About me

My Ph.D. focuses on monocular/multi-view depth estimation. This is a comprehensive task, encompassing topics including NeRF, structure-from-motion, correspondence estimation, camera pose estimation, camera calibration, self-supervision, etc.

Research Highlights

- **Revisit Self-Supervision as Local Structure-from-Motion.**
 - Robust pose estimation outperforms COLMAP, preparing pose for NeRF rendering on short videos.
 - First work demonstrates self-supervision enhances supervised depth with RGB inputs.
 - First work demonstrates self-supervision enhances supervised correspondence with RGB-D inputs.
- **The Overlooked Relationships between Monocular 3D Sensing and Intrinsic.**
 - Monocular camera calibration over in-the-wild images.
 - Intrinsic scales up multi-datasets monocular depth and monocular 3D object detector learning.

Education

- 2017 – 2024: **PhD, Computer Science & Engineering**, *Michigan State University*, East Lansing, U.S.
Dissertation: Structure-from-Motion with Monocular Depth and Dense Correspondence Estimation
Advisor: Prof. Xiaoming Liu
GPA: 3.70/4.0
- 2013 – 2017: **Bachelor of Engineering, Electrical and Electronics**, *Southeast University*, Nanjing, China.
GPA: 3.54/4.0

Publications

- ECCV'24 **Revisit Self-Supervision with Local Structure-from-Motion** [\[PDF\]](#).
Shengjie Zhu, Xiaoming Liu
- ECCV'24 **Produce Accurate LiDAR Depthmap via Determining Stereo Occlusion** [\[PDF\]](#).
Shengjie Zhu, Girish Chandar Ganesan, Xiaoming Liu
- NeurIPS'23 **Tame a Wild Camera: In-the-Wild Monocular Camera Calibration** [\[PDF, Code\]](#).
Shengjie Zhu, Abhinav Kurmur, Masa Hu, Xiaoming Liu
- CVPR'23 **LightedDepth: Video Depth Estimation in light of Limited Inference View Angles** [\[PDF, Code\]](#).
Shengjie Zhu, Xiaoming Liu
- CVPR'23 **PMatch: Paired Masked Image Modeling for Dense Geometric Matching** [\[PDF, Code\]](#).
Shengjie Zhu, Xiaoming Liu
- CVPR'20 **The Edge of Depth: Explicit Constraints between Segmentation and Depth** [\[PDF, Code\]](#).
Shengjie Zhu, Garrick Brazil, Xiaoming Liu

Work Experience

- May – Aug, 2024 **Research Scientist Intern, Google.**
Accurate Camera Pose Estimation over long/short/micro baselines. Benchmark benefits on NeRF and Self-supervision.
- June – Sep, 2022 **Applied Scientist Intern, Amazon Device AI.**
Develop SoTA Few-Shot Object Detection System.
- June – Sep, 2021 **Applied Scientist Intern, Amazon Device AI.**
Develop Non-Learning Algorithm for Improved Depthmap Groundtruth from LiDAR, applicable to KITTI, Nuscenes, DDAD, Waymo, and Other Driving Datasets.

Computer Skills

Language **Python, CUDA, Matlab, C++, PyTorch, Tensorflow, CuPy, Numba**

Talk

- Aug. 08, 2023 **3D Perception from Two Views**, Google Pixel Biometrics Seminar.
- Feb. 05, 2024 **Structure-from-Motion Meets Self-supervised Learning**, CMU VACS Seminar. [\[Link\]](#)