

Shengjie Zhu

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About me

I'm an Applied Scientist at Amazon Ring AI. My Ph.D. research focused on 3D vision, including depth estimation, Structure-from-Motion, image correspondence, camera pose estimation, camera calibration, and etc.

Work Experience

- Aug, 2024 – now **Applied Scientist, Ring AI, Amazon.**
1. Train, Evaluate, Compress, and Deploy Animal Detection Model on Ring Edge Devices.
2. Developed Ring AI Agent for Custom Notification.
- May – Aug, 2024 **Research Scientist Intern, BAIR, 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, Nusences, DDAD, Waymo, and Other Driving Datasets.

Education

- 2017 – 2024: **PhD, Computer Science & Engineering, Michigan State University**, East Lansing, U.S.
Dissertation: Structure-from-Motion from Dense Depth and Correspondence
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

- ICCV'25 **Motion-from-Structure: Monocular Depth Model Solves Accurate Multi-View Camera Poses** .
(in review) [Shengjie Zhu](#), Ahmed Abdelkader, Mark J. Matthews, Xiaoming Liu, Wen-Sheng Chu
- ECCV'24 **Revisit Self-Supervision with Local Structure-from-Motion** [\[PDF, Code\]](#).
[Shengjie Zhu](#), Xiaoming Liu
- ECCV'24 **Remove Projective LiDAR Depthmap Artifacts via Exploiting Epipolar Geometry** [\[PDF, Code\]](#).
[Shengjie Zhu](#), [Girish Chandar Ganesan](#), Abhinav Kumar, 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

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. [\[Link\]](#)
- Jul. 09, 2024 **Structure-from-Motion from Dense Learning**, Google Pixel Biometrics Seminar.