

# Ziyue Feng

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## Research Interests

My research interests include **3D Computer Vision, Depth Prediction, and 3D Reconstruction**. I love the research topics that impact practical applications, like autonomous driving, AR/VR, and robotics.

## Education

- **Clemson University** SC, USA  
*PhD in Computer Vision* Aug 2019 - Present
- **Xi'an Jiaotong University** Xi'an, China  
*Bachelor of Computer Science;* Aug 2015 - Jun 2019

## Selected Publications

- **Ziyue Feng**, Huangying Zhan, etc.. "NARUTO: Neural Active Reconstruction from Uncertain Target Observations", (Active NeRF style 3D Reconstruction. **CVPR 2024**.)
- **Ziyue Feng**, Leon Yang, Pengsheng Guo, Bing Li. "CVRecon: Rethinking 3D Geometric Feature Learning for Neural Reconstruction" (Proposed a novel 3D geometric feature learning paradigm for neural reconstruction based on improved cost volumes. **ICCV 2023**.)
- **Ziyue Feng**, Liang Yang, Longlong Jing, Haiyan Wang, YingLi Tian, and Bing Li. "Disentangling Object Motion and Occlusion for Unsupervised Multi-frame Monocular Depth", **ECCV 2022** (2/3 of reviews are **strong accept**).
- **Ziyue Feng**, Longlong Jing, Peng Yin, Yingli Tian, Bing Li. "Advancing Self-supervised Monocular Depth Learning with Sparse LiDAR", **CoRL 2021**.
- **Ziyue Feng**, Shitao Chen, Yu Chen, Nanning Zheng. "Model-based decision making with imagination for autonomous parking", IEEE IV 2018.

## Experience & Selected Research Projects

- **Matterport** Sunnyvale, CA  
*Senior Machine Learning Engineer.* Apr 2024 - Present
  - **3D Computer Vision & Gen AI**: Reconstructing, understanding, and synthesizing 3D scene. [Link](#).
- **Google Research Intern** San Francisco, CA  
*Research Intern in Project Starline.* Sep 2023 - Dec 2023
  - **Project Starline**: Working with [Clément Godard](#) and Lynn Tsai on Google [Project Starline](#) in the field of 3D Computer Vision.
- **OPPO US Research Center** Palo Alto, CA  
*Research Intern focused on Active Neural SLAM. Mentor: Dr. Huangying Zhan.* Jun 2023 - Sep 2023
  - **Active NeRF-based SLAM**: Worked with [Huangying Zhan](#) to enable embodied intelligent agents to automatically explore, localize, reconstruct, and plan in unknown environments. Published on **CVPR 2024**.
- **Clemson University** Greenville, SC  
*Research Assistant focused on 3D Computer Vision. Advisor: Dr. Bing Li.* Aug 2019 - Jun 2023
  - **CVRecon [Link](#)**: Worked with [Eric Yang](#) at Apple to propose a novel 3D geometric feature learning paradigm for neural reconstruction based on improved cost volumes. Published on **ICCV 2023**.
  - **Dynamic Depth [Link](#)**: Worked with [Eric Yang](#) at Apple to propose a self-supervised multi-frame monocular depth prediction model dedicated to solving the dynamic objects' motion and occlusion problems. Achieves State-of-the-Art performance on the KITTI and Cityscapes dataset, especially in dynamic object areas. Published on **ECCV 2022**.

- **Fusion Depth [Link](#)**: Worked with [Longlong Jing](#) at Waymo to leverage the sparse LiDAR to improve the self-supervised monocular depth prediction accuracy. Reduced half of the depth error with a 4-beam LiDAR, obtained SOTA performance on the KITTI 'Depth Prediction', 'Depth Completion', and the 'Monocular 3D Detection' tasks. Published on **CoRL 2021**.

- **MEGVII(Face++) Research**

*Research Intern, Mentor: Donghao Liu.*

*Jan 2019 - May 2019*

- **Gaze Estimation**: We designed a GAN (Generative Adversarial Network) model to alleviate the domain shift of the gaze images from different persons, improving the gaze estimation accuracy for the driver monitoring system.

- **Institute of Artificial Intelligence and Robotics (IAIR at XJTU)**

*Research Intern, Advisor: Prof. Nanning Zheng.*

*Xi'an, China*

*Oct 2016 - Jan 2019*

- **Autonomous Parking: [Link](#)** Proposed an 'imaginative' module to improve the RRT-based parking path planning and a kinematic-aware smoothing module to refine the planned path. Published on IEEE IV 2018.

## Services

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- Reviewer for CVPR 2024, NeurIPS 2023, IEEE TIP, CoRL 2022&2023, IROS 2023, RA-L 2023, ICAS 2023, Journal of Robotics, and IEEE Access.

## Technical Skills

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- **Programming**: Python, C/C++, Linux/Unix, CUDA
- **Language**: Mandarin, English