Feiran Wang

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Chicago, Illinois - 60616, United States

Summer 2026 Internship: May 1 - August 31

Research Focus

- **Vision Foundation Model**: Feed-Forward 3D Reconstruction.
- **Generative AI**: Synthetic data generation and 3D Generation.
- **3D Application**: X-ray Reconstruction, 3D Segmentation, and Visual SLAM.

Education

- **University of Illinois Chicago** — *Sep. 2025 - Dec. 2025*
  Visiting Ph.D. Student in Computer Science, Advisor: Prof. Yan Yan — Chicago, United States
- **Illinois Institute of Technology** — *Jan. 2024 – Expected 2028*
  Ph.D. Student in Computer Science, Advisor: Prof. Yan Yan — Chicago, United States
  Planned research visit at University of Michigan, Ann Arbor (Jan. 2026 – May. 2026)
- **University of Illinois Urbana-Champaign** — *Jan. 2023 – Dec. 2023*
  M.S. in Engineering, Advisor: Prof. David Forsyth — Urbana, United States
- **Shanghai University** — *Aug. 2018 – Jul. 2022*
  B.Eng. in Computer Science, Advisor: Prof. Xiaoqiang Li — Shanghai, China
- **University of Toronto** — *Aug. 2021 – Dec. 2021*
  Exchange Student in Computer Science — Toronto, Canada

Skills

- **Programming:** Python, C/C++, C#, CUDA, MATLAB
- **3D & Robotics:** MuJoCo, ROS, Open3D, Blender
- **Deep Learning:** PyTorch, TensorFlow, Large-scale model training (Argonne HPC)
- **Web & Systems:** Flask, React, HTML, AWS, Linux

Publications

C=Conference, J=Journal, U=Under Review

[U.1] **Feiran Wang**, Yan Yan. **RayMap3R: Inference-Time RayMap for Dynamic 3D Reconstruction**.

[U.2] **Feiran Wang**, Junyi Wu, Dawen Cai, Yuan Hong, Yan Yan. **CogniMap3D: Cognitive 3D Mapping and Rapid Retrieval**.

[C.1] **Feiran Wang***, Jiachen Tao*, Junyi Wu*, Haoxuan Wang, Bin Duan, Zongxin Yang, Yan Yan. **X-Field: A Physically Informed Representation for 3D X-ray Reconstruction**. **NeurIPS'25 (★Spotlight★)**.

[C.2] **Feiran Wang**, Bin Duan, Jiachen Tao, Nikhil Sharma, Gaowen Liu, Dawen Cai, Yan Yan. **ZECO: ZeroFusion Guided 3D MRI Conditional Generation**. **MVA'25 (Oral)**.

[J.1] **Feiran Wang**, Xiaoqiang Li, Jitao Liu. **PCCN-RE: Point Cloud Colourisation Network Based on Relevance Embedding**. *IET Computer Vision*, 2022.

Experience

- **Research Assistant** — *Sep. 2024 - Apr. 2026*
  University of Michigan Ann Arbor, Cai Lab (Remote) — NIH-Funded Project
  - Designed a **3D generative model** for medical imaging to alleviate 3D neuron data scarcity, developing a ControlNet-conditioned latent-diffusion *mask-to-volume* model and achieving a **50**× dataset expansion.
  - Contributed to building an automated interactive annotation platform for medical images, leading the design and training of nnUnet based auto-segmentation models for auto-labeling and assisted refinement.
  - Developing 3D instance-segmentation models for neuron datasets based on the MONAI framework, adapting the Mask2Former architecture to capture volumetric neuron-specific features.
  - Refactored model architecture to support scalable distributed training; executed large-scale multi-node experiments on Argonne HPC clusters using MPI across dozens of nodes.
- **Robotics Software Engineer** — *May 2023 - Aug. 2023*
  Foxconn Interconnect Technology, San Jose, CA — Research Intern

- Co-designed a complete robotic arm framework for rapid design and simulation driven parameter tuning, spanning CAD modeling in Blender, auto-generation of consistent URDF from a single ground truth, and **MuJoCo + MoveIt** integration for path planning and motion control; and fabricated a 3D-printed arm for validation.
- Bridged URDF-based planning and MuJoCo control by resolving coordinate offsets and wrapping controllers; enabled accurate pick-and-place with PD control and quantitative monitoring.

- **Algorithm Engineer** *Apr. 2022 - Aug. 2022*
  NPLACE Startup, Shanghai, China Research Intern
  - Rebuilt and optimized the MVSNet architecture for efficient image-based 3D reconstruction, achieving a 10% improvement in modeling speed and accuracy while reducing network redundancy.
  - Enhanced product-level 3D point cloud quality by applying K-Means++ clustering for color simplification and exploring hole-repair solutions through both rule-based and PF-Net model-based methods.
- **Software Engineer** *Sep. 2021 - Dec. 2021*
  ZIPLUNCH, Toronto, Canada Backend Intern
  - Built and maintained the backend of a restaurant management platform using Flask (Python), designing APIs for order processing, profile management, and real-time updates.
  - Designed and optimized database schemas, encapsulated SQL queries for modular data access, and synchronized records between new and legacy systems to ensure compatibility.

PROJECTS

- **Depth Fusion Visual SLAM** *Feb. 2023 - May 2023*
  UIUC, *Advised by Prof. Shenlong Wang*
  - Designed a depth-fusion visual SLAM system integrating color and depth inputs, featuring a prediction network and fusion module for improved outdoor scene reconstruction.
  - Replaced rotation matrix tracking with quaternion-based filtering to enhance stability; validated performance on a custom ZED 2 dataset.
- **Autonomous Vehicle System** *Sep. 2022 - Dec. 2022*
  UIUC, *Advised by Prof. David Forsyth*
  - Developed pedestrian detection and braking via YOLO and ROS integration, enabling automatic stopping and restart based on scene perception. [Video]
  - Implemented lane detection using Hough transform and Kalman filtering; recovered odometry and SLAM with Lego-LOAM for motion estimation.

ACTIVITIES

- **Conference Assistant** *Jul. 2025*
  International Conference on Multimedia Retrieval (ICMR), Chicago, IL
  - Assisted with attendee coordination and session logistics at the conference.
- **Invited Lightning Talk Presenter** *Jun. 2025*
  Midwest Machine Learning Symposium (MMLS), Chicago, IL
  - Presented research on 3D reconstruction methods for medical imaging.
- **Team Representative** *May 2025*
  ALCF INCITE GPU Hackathon, Argonne National Laboratory, IL
  - Participated in multi-node GPU optimization for large-scale model training and delivered the presentation.

HONORS AND AWARDS

- **Cyrus Tang Scholarship** *2024 – 2025*
  Illinois Institute of Technology
- **International Exchange Scholarship** *2020 – 2021*
  Shanghai University
- **Academic Excellence Scholarship** *2019 – 2020*
  Shanghai University

SERVICES

Conference Reviewer: ICLR 2026, ICCV 2025, ICMR 2025, MVA 2025

Journal Reviewer: Computer Vision and Image Understanding (CVIU)