Sirui Xie

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Education

Imperial College London Oct. 2026 - Present

MRes in **Bioengineering**
Working on active tactile perception of robot-object systems.

Beijing University of Civil Engineering and Architecture, Beijing Sept. 2021 - Jun. 2026

*B.Eng in **Vehicle Engineering**:* 2021-2022
*B.Eng in **Urban Design**:* 2022-Present
GPA: 88.69 / 100

Research and Internship Experience

MSEI Lab Oct. 2026 - Present

MRes Student Fortunately Advised by *Dr.Dandan Zhang*

from Imperial College London.

- Exploring active tactile perception of robot-object systems.
- Learning about *Data Analysis for Research*, *Reinforcement Learning* and *Human Neuromechanical Control and Learning*.

CoRe Lab Oct. 2024 - Dec.2025

Research Intern Fortunately Advised by *Dr.Yixin Zhu* from Peking University

- Explored fixed manipulator base placement problem and developing algorithms to solve it.
- Completinged journal/conference (T-RO, IROS) paper review work several times.
- Explored 6-dof object pose estimation in heavily occluded situation for robot camera sensors.
- Learned and explored robotics research area.

Institute for AI Industry Research (AIR) & Lightwheel AI May 2023–Oct 2024

Research Intern Fortunately Advised by *Dr.Hao Zhao* from Tsinghua University

- Developed Gaussian Splatting based 3D scene generation pipeline.
- Explored and participated in the experiments of a NeRF-based simulation Pipeline for Autonomous Driving.
- Led team to build radar simulation module periodically.

AI Design Lab Dec. 2022 - Present

Research Assistant Fortunately Advised by *Prof.Yuejia Xu* *From Beijing University of Civil Engineering and Architecture*

- Facilitated weekly seminars on AI design and expression pipeline for architecture workflows.
- Collaborated with team members to discuss and demo neural rendering & generative design techniques.

Publications

- **B*: Efficient and Optimal Base Placement for Fixed-Base Manipulators**
  Zihang Zhao*, Leiyao Cui*, **Sirui Xie***, Saiyao Zhang, Zhi Han, Lecheng Ruan, Yixin Zhu
  In proceedings of IEEE Robotics and Automation Letters (RAL). [Project Page]

- **Vi-TacMan: Articulated Object Manipulation via Vision and Touch**
  Leiyao Cui*, Zihang Zhao*, **Sirui Xie***, Wenhuan Zhang*, Zhi Han, Yixin Zhu
  In proceedings of IEEE International Conference on Robotics and Automation (ICRA). Project Page

- **Structured-NeRF: Hierarchical Scene Graph with Neural Representation**
  Zhide Zhong, Jiakai Cao, Songen Gu, Sirui Xie, Liyi Luo, Hao Zhao, Guyue Zhou, Haoang Li, Zike Yan.
  In proceedings of European Conference on Computer Vision (ECCV) [paper link]

Research Interests

- Tactile perception and control for robotics,
- Motion planning,
- Reinforcement learning for robotics.

Selected Competitions and Awards

[First Price] Honor of Beijing Challenge Cup: Entrepreneurial Plan Competition May. 2023
[Second Class Scholarship] Honor of Comprehensive Second Class Scholarship of BUCEA Sept. 2022
[Silver Award] Honor of Beijing Challenge Cup: Entrepreneurial Plan Competition Jun. 2022
[Third Prize] Honor of Blue Bridge Cup Programming Competition Beijing Division B May. 2022

Relevant Skills

- Python: Proficient; experienced in PyTorch and developing large-scale AI systems
- C/C++: Intermediate; capable of project-level implementations
- Rust: Beginner; currently studying and applying in practice
- LaTeX & Markdown: Skilled; for academic writing and technical documentation
- 3D Modeling & Rendering: Familiar with Rhino/Blender/SketchUp, AutoCAD 2D, artistic rendering pipelines
- Other Tools: Git, Linux command-line, etc
- ...

Other

- Student Organization: Student Art Group of BUCEA, Orchestra
- Kaggle: House Price Competition, score: 0.125, rank: top14.3%
- Southern Calligraphy Exhibition design participation, reported by the People's Daily
- Parametric design and 3D printing of the exhibition "The new world" of Zaha Studio