Peiqi WANG

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EDUCATION

The Chinese University of Hong Kong, Shenzhen — Shenzhen, China
Master of Philosophy – Computer and Information Engineering — Sept.2023 – Oct.2025
- GPA: 3.321/4

Harbin Institute of Technology, Shenzhen — Shenzhen, China
Bachelor of Engineering - Mechanical Design, Manufacturing and Automation — Sept.2019 – Jun.2023
- GPA: 82.33/100 (**Grade: B+**)

PUBLICATION

Peiqi Wang, Guanqi Liang, Da Zhao, Tin Lun Lam, "Enhancing Connection Strength in Freeform Modular Reconfigurable Robots Through Holey Sphere and Gripper Mechanisms," in 2025 IEEE International Conference on Robotics and Automation (ICRA). IEEE, 2025, pp. 7923-7929. [paper]

RESEARCH

Moduler Self-Reconfigurable Robot | Individual research during the Master's degree — Jul.2023 – Jun.2025
Research on bionic snail robot, SnailBot, at Freeform Robotics. Supervisor: Tin Lun LAM
- Designed and built **SnailBot**, a modular self-reconfigurable robot with a **spherical freeform gripper-hole connection** and **magnetic differential tracks**, improving connection stability and locomotion efficiency.
- Conducted **MATLAB geometric simulations** to optimize gripper trajectories, hole distribution, and track geometry under spatial and mechanical constraint • Implemented dual-mode connection: magnetic tracks and gripper-based connector.
- Designed a **custom-shaped compact PCB** and full mechanical structure in **SolidWorks**, integrating sensors, actuators, and control circuits within tight spatial limits.
- Developed **embedded control programs** on **ESP32-S3** using PlatformIO (Arduino framework), achieving stable multi-mode control via Wi-Fi interface.
- Selected **fabrication methods** based on practical trade-offs: **SLA/SLM** for complex geometries, **FDM** for early-stage prototypes

Multi-object Tracking Algorithm | Design/Dissertation for Undergraduate Graduation — Oct.2022 – Jun.2023
Research on multi-target detection and tracking algorithms in congested scenes. Supervisor: Weihong REN
- Reproduced and extended **FairMOT** for **multi-target detection and tracking** in crowded scenes.
- Integrated **crowd counting** into FairMOT to enhance robustness under occlusion and high-density conditions.
- Deployed the improved model on **NVIDIA Jetson TX2**, enabling real-time embedded inference and on-device tracking.
- Gained hands-on experience in deep learning pipeline setup, data preprocessing, and Ubuntu-based development.

INTERNSHIP

Bambu Lab | MakerWorld - CyberBrick — Shenzhen, China
Mechatronics Design Intern — Jul. 2025 – Now
- Led the development of a new gameplay project using the CyberBrick suite, covering structural design, PCB layout, and control programming; drafted technical documentation and collaborated with colleagues to ensure successful project delivery.
- Executed on-demand design tasks, including 3D-printed robotic arms and structural optimization of existing models.
- Mastered FDM 3D printing and part design, building a solid foundation for rapid prototyping and functional iteration.

HONOURS

• **National First Prize** in the RoboMaster University Championship	2021
• **National First Prize** in the National College Students Advanced Drafting Technology and Product Information Modeling Innovation Competition	2021
• **National Thrid Prize** in the China College Students Sunshine Sports Table Tennis Competition	2021
• **Second Prize** in the University Annual Freshman Project Competition	2021
• Outstanding Students of Haribin Institute of Technology	2021

SKILLS & INTEREST

- Software & Tools: SolidWorks, Autodesk CAD, Autodesk Fusion360, Arduino, ESP32, EasyEDA, MATLAB
- Programming: Python, C/C++
- Sports: Table Tennis, Badminton, Tennis