YING Yiyuan

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Education

Southern University of Science and Technology — Shenzhen, China
M.Eng in Intelligent Manufacturing and Robotics — *Sept. 2025 – Jun. 2028*

East China University of Science and Technology — Shanghai, China
B.Eng in Mechanical Design, Manufacturing, and Automation — *Sept. 2021 – Jun. 2025*

- GPA: **3.73/4.0**, Average Score: **88.62/100**, Ranking: **11/137**
- Language Proficiency: **IELTS 7.0** (L 7.5/R 7.0/W 7.0/S 5.5), CET-4 & CET-6 Passed

Intern Experience

Electrified Motor R&D Intern — July 2024 – Oct. 2024
Bosch Automotive Components (Changsha) Co., Ltd. Shanghai Branch — *Shanghai, China*

- Assisted R&D and testing engineers in motor design, participated in organizing and analyzing test data to support motor performance improvement.
- Used MATLAB to analyze fatigue test data of key components, proposed optimization suggestions to enhance component durability.
- Participated in the analysis and design improvement of motor heat dissipation performance, enhancing the motor's heat dissipation efficiency under high-load conditions.
- Participated in the research of digital management of departmental engineering documents, optimized document management processes, and improved work efficiency.

Chassis R&D Intern — July 2023 – Sept. 2023
Zhejiang CRRC Electric Vehicle Co., Ltd. — *Ningbo, China*

- Participated in the chassis development of three batches of ordered vehicle models, assisted power equipment engineers in completing chassis components design and cooling pipeline layout.
- Participated in the air conditioning wind speed test for six batches of ordered vehicle models and the chassis vibration test for a certain vehicle model, assisting in data analysis.
- Proficient in UG, AutoCAD, drew over 100 2D engineering drawings and 3D model drawings.

Projects

Multimodal Robot Control, Perception & Interaction — Sept. 2024 – June 2025
Supervisor: Prof. Jianjun YI, Collaborate with Shanghai Xiaoyuan Innovation Center

- Focused on the autonomous motion control requirements of multimodal multi-legged robots in complex stellar surface environments, and designed a six-degree-of-freedom leg structure usable in multiple modalities.
- Built a virtual simulation and training environment based on NVIDIA Isaac Sim and Isaac Lab, and set up a simulation test platform in the laboratory including a suspension system and a motion capture positioning system.
- Designed a comprehensive control framework integrating imitation learning and reinforcement learning, constructing a teacher-student policy structure based on PPO and SAC algorithms.
- Through reinforcement learning training, the robot learned stable and efficient autonomous crawling gaits in a simulated stellar surface environment, verifying the effectiveness of the algorithmic strategy.

Space Target: Awareness, Game Theory & Evaluation — Sept. 2024 – May 2025
Supervisor: Prof. Jianjun YI

- Utilized traditional differencing algorithms, through background subtraction and trajectory tracking techniques, to track and identify long-distance non-natural celestial objects and obtain their motion trajectories.
- Employed neural networks to analyze image data, identifying partial spacecraft payloads through semantic segmentation, and predicting the target spacecraft's flight attitude and related functions.
- Driven by space robotic arm operation tasks under conditions of incomplete field of view and prior information, constructed a multi-modal perception system, and integrated Large Language Model (LLM) expert knowledge reasoning capabilities to guide the space robotic arm in achieving heuristic active perception and incremental target understanding under incomplete field of view conditions to complete robotic arm operation tasks.

ECUST ROBOCON Team "WUER" July 2023 – July 2025

Vice-Captain, Mechanical Group Leader

- Served as the team's Vice-Captain and Mechanical Group Leader, primarily responsible for the overall work of the mechanical group, designed and built the entire mechanical structure of two robots.
- Created hundreds of 3D part drawings and assembly drawings, and led the joint debugging work to ensure the accuracy and feasibility of the mechanical structure and control algorithms.
- Responsible for the team's daily management and operational work, including organizing multiple mechanical group training sessions during recruitment periods to improve the team's overall technical level and work efficiency.
- The team won the **National Third Prize** in the main competition of the 23rd CURC-ROBOCON "Harvest Day" and the **National Second Prize** in the Operation Challenge.

Development of Intelligent Charging System for Future Parking Lots July. 2022 – Sept. 2024

Supervisor: Prof. Weiling LUAN

- The project designed and developed a new mobile power distribution system, which improves charging efficiency by more than 2.5 times and reduces carbon emissions by about 842kg through a 2D mobile power distribution mechanism and a front-end applet. It solved the problems of low utilization efficiency of charging piles and difficulty in expanding the power grid in old areas, filling a gap in the domestic related field.
- As a project representative, was invited by the Plastic Omnium to Paris, France in September 2023 to participate in the "The Future Of Energy For Mobility" energy-saving creative competition to showcase the project.
- Responsible for the development of the system's mechanical structure and electronic control system, wrote over 500 lines of code, drew over 100 parts, and was responsible for the construction and debugging of the demonstration device.
- The project won **one national award**, **three provincial awards**, and **two university-level awards**. The project was also recognized as an **outstanding project** in the University Student Innovation Training Program.