

Yi Zhang

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EDUCATION

- | | |
|----------------|--|
| 2023 - | Doctor of Philosophy(DPhil), Tianjin University, China
Advisor: Tao Sun (Page)
Research Focus: Intelligent Design of Robotic Mechanisms |
| 2019 -
2023 | Bachelor of Engineering (BEng), Tianjin University, China
Double Major in Intelligent Manufacturing Engineering; and in Computer Science
Thesis: Design, Control, and Dynamic Identification of Aerial Refueling Robot
Thesis: Intelligent Content Generation for Social Media Opinion Dissemination |

PROJECTS & COURSEWORK

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|----------------|---|
| 2024 - | Integrated Design of Robot Topology-Scale-Control
Independently conducted research on Reinforcement Learning, Graph Neural Networks and Genetic Algorithms |
| 2024 - | Multimodal Model Fine-tuning for Robot Image Interpretation and Topology Analysis
Independently conducted research on fine-tuning multimodal large models and designing chain-of-thought reasoning processes. |
| 2023 -
2024 | Robot Design Foundation Model
Responsible for Graph Neural Networks, Model Evaluation, and Dataset Construction |
| 2022 -
2023 | Undergraduate Innovation and Entrepreneurship Project, Provincial Level
Reconfigurable Mobile Robot Based on Tensegrity Structures (Team Leader) |
| 2021 -
2022 | Undergraduate Innovation and Entrepreneurship Project, Provincial Level
Design and Control of a Cable-Driven Multi-Modal Mobile Robot (Team Leader) |
| 2022 | Autonomous Mobile Sorting Robot
Responsible for Gripper Design, Navigation, and Path Planning |
| 2021 | Quadruped Mobile Robot
Responsible for Mechanism Design |

AWARDS

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| 2024 | Second Prize, 21st China Postgraduate Mathematical Contest in Modeling |
| 2024 | Third Prize, 6th China Postgraduate Artificial Intelligence Innovation Contest |
| 2023 | Outstanding Graduate Award of Tianjin University |
| 2022 | First Prize, National College Student Mechanical Innovation Design Competition |
| 2022 | 3rd Place, ASME Student Design Competition (SMRDC) |
| 2021 | National Scholarship |
| 2021 | Top 10 Outstanding Youth (Student), School of Mechanical Engineering, Tianjin University |
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| 2020 | Meritorious Winner, Mathematical Contest in Modeling (MCM) |
| 2020 | National Scholarship |

PUBLICATIONS

- [1] Yang, Q., Hu, K., Zhang, Y., Lian, B., & Sun, T. (2024). Design and experiment of multi-locomotion tensegrity mobile robot. *Mechanism and Machine Theory*, 198, 105671.
- [2] Hu, K., Zhang, Y., Bu, Q., Wang, Z., Dong, Y., & Lian, B. (2022). Low-Actuation, Multi-DOF Resettable Gear Transmission Device (Patent Application No. CN202210512755.4). Tianjin University. China: National Intellectual Property Administration. Publicly disclosed under Publication No. CN115111337A on September 27, 2022.
- [3] Zhang, Y. Design and Experiment of a Continuum Robot Based on Tensegrity Structures. Manuscript in Preparation.