Zilin Chen

Room 235, Student Department 28#, Tsinghua University, Beijing, 100084, P. R. China

(+86)189-9550-1708 ⋄ chenzili22@mails.tsinghua.edu.cn

EDUCATION

School of Mechanical Engineering, Tsinghua University, Beijing, China   Aug 2022 - present

B.E. in Mechanical Engineering

Current overall GPA until junior: 3.59/4.0 (Top 35%)

Core Courses:

- Fundamentals of Computer Program Design (A)
- Mechanical Engineering Mechanics (1) (A+)
- Physics for Scientists and Engineers B (2) (A)
- Measurement and Instrumentation (A-)

Department of Mechanical and Industrial Engineering, University of Toronto   Sep 2024 - Dec 2024

Exchange student in Mechanical Engineering

Major courses GPA for this semester: 3.9/4.0

Courses:

- Kinematics and Dynamics of Machines (A-)
- Fluid Mechanics I (A)
- Circuits with Applications to Mechanical Engineering Systems (A+)

PROJECTS

Collaborative Robots Design - Research Assistant   Feb 2024 - Dec 2024

Advisor: Dr. Ze Wang, professor and assistant dean at School of Mechanical Engineering, Tsinghua University

- Summarized current research progress on Motion Trajectory Planning of Two-arm Collaborative Robot
- Improved the stability on the end effector of a Two-arm Collaborative Robot
- **Analyzed the workspace** and constraints of the robot to prevent collisions between the two-arm Collaborative Robot
- Collaborated with a team of four to design different robot configurations to improve stiffness

Robot trajectory planning - Research Assistant   May 2024 - July 2024

- Published on 9th IEEE International Conference on Advanced Robotics and Mechatronics, won the Best paper award in advanced robotics
- Planned the trajectory for a seven degree of freedom robot, based on Franka Robot
- Utilize charts to visually represent the changes in velocity, acceleration and jerk
- Employed multiple solutions to solve the time requirement to pass through the same set of waypoints, and compare them through velocity, acceleration, and jerk

Intelligent Vehicle Design - Group Leader   July 2024

- Led a team of three in designing an autonomous car-shaped vehicle capable of transporting objects from start to finish
- Integrated advanced features including **line-following, obstacle navigation**, destination location, and Bluetooth connectivity for remote control
- Acquired proficiency in utilizing PID control algorithms to fine-tune input parameters for precise motor control
- Utilized an STM32 microcontroller for vehicle control and Open MV for image capture (**computer vision**), trajectory planning, and dynamic output management

UTAT Autonomous Drone Racing Team - Research Assistant Sep 2024 - Jan 2025
Advisor: Dr. Hugh H.T. Liu, Professor and Director of the Centre for Aerial Robotics Research and Education, University of Toronto
- Helped with tests over ESC switching frequency and speed curve
- **Built a simulator** for a racing drone, mainly focus on the controller part, extract from the open-source project and convert it into a usable version for the onboard computer
- **Planned the yaw-axis trajectory** for the racing drone, under a given routine and gates, using CasADi as solver to solve for the optimal question
- Increasing the time for the drone to have a view of the gate, improving positioning accuracy

Artificial Muscle Actuated UAV - Research Assistant Feb 2025 - Present
Advisor: Dr. Huichan Zhao, Associated Professor at School of Mechanical Engineering, Tsinghua University
- Built simulation framework for novel UAV configuration
- Developed **flight controller** for artificial muscle-actuated drone

INTERNSHIP EXPERIENCE

Huahaiqingke CMP Edge Polishing - Mechanical Engineer Jun 2025 - Jul 2025
- Created **kinematic simulation model** for CMP polishing process
- Optimized leveling workflow, improving working efficiency
- Investigated parameter effects on edge polishing quality

Xiaomi Corporation - Mechanical Engineer Jul 2025 - Present
- Assembled and debugged industrial robotic arms for automotive production
- Conducted **Hardware-in-Loop (HIL) simulations** for robotic systems
- Developed control algorithms for industrial robotic arm movements

LEADERSHIP AND ACTIVITIES

Tsinghua University Symphony Orchestra Aug 2023 - July 2024
CCYL Tsinghua University Committee - Vice President
- Coordinated the orchestra to participate in the 7th National College Student Art Exhibition, and won the top prize
- Responsible for daily management of the orchestra and organizing the daily training
- Organized multiple concerts with at least 100 audience and 30 performers for each concert

Student Social Practice Team Jan 2024 - Mar 2024
CCYL Mechanical Engineering Committee - Project Leader
- Recruited 14 members on campus and invited 2 students from HUST and TJU to participate
- Visited multiple mechanical industry cooperations and communicated with frontline engineers
- Awarded the Golden Award for Social Practice in the Department, and personally awarded the Best Team Leader

SKILLS AND INTERESTS

Standard English Tests	IELTS: Total 7.5 (Reading 8.5, Listening 8.5, Speaking 6.0, Writing 6.5)
Interests	Automated control and trajectory planning, dynamics control
Skills	Metal craftsmanship and industrial robot experiment skills
Programming Languages	proficient in C, Python, MATLAB, familiar with Java, C++
Office Applications	Microsoft Office, Photoshop, Auto CAD, SolidWorks, Multisim

SELECTED AWARDS

Literary and Art Scholarship	*2023*
Literary and Art Scholarship	*2024*
Best social practice team Leader	*Spring 2024*