Jiahao Xie

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EDUCATION

University of Delaware,	Computer Science ,	PhD student,	USA , 2024.2 —
Central South University,	Traffic and Transportation Engineering,	PhD student,	China, 2022.9 — 2023.12
Central South University,	Traffic and Transportation Engineering,	B.Sc,	China, 2018.9 — 2022.6

GPA: **92.45/100**； Rankings: **1/41**； Scholarship: **30,000 yuan** in total

PUBLICATIONS AND PATENTS

- **Paper:**

Mengmei Zhong[#], **Jiahao Xie**[#], Yao Feng, Shao-Hui Zhang, Jiangnan Xia, Li Tan, Ningxin Chen, Xiaolin Su, Qian Zhang, Yunzhi Feng* and Yue Guo*, Causal effects of the gut microbiome on COVID-19 susceptibility and severity: A two-sample Mendelian randomization study. Frontiers in Immunology. (**co-first authors, JCR Q1, IF=7.3**)

- **Patent:**

①Bing Yi, Yongfeng Song, Haowen Zheng, Wencheng Yin, Mingjie Guo, **Jiahao Xie**, Honglei Xu, Renkai Sun, Ying Zhang, Yanjun Zhong. Topological optimization method and system for multi-component structure in mortise and tenon interlocking connection. (Patent for Invention)

②**Jiahao Xie**, Neng Wang. Quick connecting device for galvanic pile test. (Patent for Utility Model)

③**Jiahao Xie**, Neng Wang. Automatic calibration device and system for fuel cell engine. (Patent for Utility Model)

AWARDS AND HONORS

- **National Encouragement Scholarship**. (2021)
- **Second prize of 13th 'Zhengda Cup' National College Students Market Survey and Analysis competition**. (2023)
- **Third prize of the 19th China Post-Graduate Mathematical Contest in Modeling**. (2023)
- Third prize of 2020 Asia and Pacific Mathematical Contest in Modeling APMCM. (2020)
- The third prize of 2nd lnternational Concrete Dragon Boat Competition. (2020)
- Second prize of 11th 'Zhengda Cup' National College students Market Survey and Analysis competition of Hunan province. (2021)
- **Academic Year Special Scholarship**. (5,000 yuan) (2019)
- Academic Year First Class Scholarship(twice). (2,000 yuan) (2020,2021)
- **Greenmei Innovation and Practice Scholarship**. (10000yuan) (2020)
- Ganglian Logistics Scholarship. (6000 yuan) (2019)
- Top ten academic tutors of CSU. (2020)
- Outstanding student of CSU. (2019,2020)
- Outstanding league leader of CSU. (2020)

RESEARCH EXPERIENCES

- **Multi-objective optimization (Prof. Liu Hui)** 2022.9—2023.6

The multidisciplinary optimization of aerodynamic drag reduction of train head shape was studied. OLHS was used to sample 30 points in the design variable space of train head shape, and the corresponding drag coefficient and lift coefficient were calculated based on FFD change and CFD. The surrogate model was trained by these data, and a new hybrid differential evolution algorithm was proposed to optimize the parameters of the surrogate model. Finally, a new double-layer structure differential evolution algorithm was proposed for multi-objective aerodynamic optimization.

- **Research project - bioinformatics analysis (Prof. Feng Yunzhi)** 2023.1—2023.3

I was mainly responsible for bioinformatics algorithm research, data analysis and programming practice. Through statistical methods, the problem of targeted drugs for diseases has been preliminarily explored. At present, **one JCR Q1 paper has been published**, and two papers are under review.

- **Degree project - Robot-driven intelligent manufacturing of train (Prof. Liu Hui)** 2022.1—2022.6

The multi-robot system applied to the high-speed train body manufacturing scene was studied, and the related technologies were analyzed. According to the structure of the body and the manufacturing and assembly process of each component, a multi-robot task allocation algorithm (clustering combinatorial auction algorithm) and a path planning algorithm (bidirectional A * algorithm) suitable for the body manufacturing scene were proposed, and a simulation system based on ROS and Gazebo was established. **Won the excellent capstone project of Central South University.**

- **The University Student Innovation and Entrepreneurship Project(S202110533197X)** 2021.3—2022.3

I was the leader. We mainly wrote intelligent time management software. The innovation lied in the functions of intelligent identification and creation of tasks, visual analysis of task data, personalized scheme formulation and platform sharing and communication. And we **applied for software copyright.**

- **The University Student Innovation and Entrepreneurship Project(S202010533183X)** 2020.3—2021.3

I was the key member and built a learning resource sharing platform for college students which was named Zhongnan Library. I was responsible for resource collection and database management.

- **Topology optimization method of high-speed train body structure (Prof. Yi Bing)** 2020.1—2021.4

The structural topology optimization and lightweight of high-speed train body were studied. I was responsible for the research of structural splitting algorithm and applied for a patent for invention.

SKILLS

- **Programming Language:** Python, MATLAB, R
- **ILTES:** Overall Band Score: 7 (Listening: 7, Reading: 7.5, Writing: 6, Speaking: 7)

VOLUNTARY AND SOCIAL WORKS

As a volunteer in the university, I have participated in many volunteer service activities, such as caring for the elderly in nursing homes and caring for disabled children in special schools. At the same time, I also help my classmates solve their academic problems.

SELF ASSESSMENT

- I am introverted, able to sink in and focus on one thing.
- I have strong learning ability, good at innovation, flexible to adapt to different environments.
- I have a broad vision and overall concept, open and active thinking.
- I am responsible for my work, can work hard, have a strong sense of ambition and responsibility.
- I am honest and trustworthy, careful, with a good team.