

Tiancheng Jiao

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EDUCATION

University of Michigan

Ann Arbor, MI

B.S.E. in Computer Engineering

Sept 2023 - May 2025 (Expected)

Overall GPA: 3.84/4.0

Core Courses: *Data Structure & Algorithm (A), Intro to Computer Organization (A), Foundations of Computer Science (A), Computer Networks (A+), Database Management Systems (A), Web Design, Development, Accessibility (A), Statistics & AI (in progress), Software Engineering (in progress)*

Awards & Honors: University Honors (Dec 2023 & May 2024); Dean's List (Dec 2023 & Apr 2024)

University of Michigan - Shanghai Jiao Tong University Joint Institute

Shanghai, China

B.E. in Electrical and Computer Engineering

Sept 2021 - Aug 2025 (Expected)

Overall GPA: 3.45/4.0

Core Courses: *Discrete Math, Programming and Elementary Data Structures, Intro to Logic Design*

PUBLICATIONS

Building a Literature Knowledge Base Towards Transparent Biomedical AI

Yuanhao Huang, Zhaowei Han, Xin Luo, Xuteng Luo, Yijia Gao, Meiqi Zhao, Feitong Tang, Yiqun Wang, Jiyu Chen, Chengfan Li, Xinyu Lu, Jiahao Qiu, Feiyang Deng, **Tiancheng Jiao**, et al., Jie Liu

Journal: *Nature Biotechnology* (Under review)

doi: <https://doi.org/10.1101/2024.09.22.614323>

ChemPerturb-Seq Screen to Identify the Hormone Cocktail Enhancing Human Beta Cell Survival After Subcutaneous Transplantation

J. Jeya Vandana, Jiajun Zhu, Alice Maria Giani, Tuo Zhang, Lauretta Lacko, Dongliang Leng, Leland Taylor, Brian Lee, Zhaowei Han, **Tiancheng Jiao**, et al.

Journal: *Cell* (Under review)

PATENT

An Automatic Measurement Tool for the Offset Amount between the Center of Pillar and the Center of the Same Group of Foundation Bolts in a Power Grid Construction Site Based on Computer Vision Technology, Shanghai Jiao Tong University (Application in Progress)

RESEARCH EXPERIENCE

[Liu Lab](#), University of Michigan

Ann Arbor, MI

Research Assistant, Supervisor: Prof Jie Liu

Apr 2024 - Present

- Developed 2 AI-powered websites for bioinformatics research projects: [ChemPerturbDB](#) and [COVID-Lung CosMX](#), integrated AI assistant into the websites to improve user-friendliness
- Analyzed biological data using Python and large language models to do further research
- Applied reinforcement learning techniques and large language models to generate and optimize biological hypotheses
- Optimized bioinformatics workflows for higher efficiency and better user experience by creating websites and connecting them to large language models
- Developed an expert matching system for ISSCR (International Society for Stem Cell Research)
- Contributed to two research papers

Data-informed Design and Intelligent Systems Laboratory, SJTU

Research Assistant, Supervisor: Prof Youyi Bi

Shanghai, China

Jun 2022 - Jun 2023

Next Generation AGV Intelligent Scheduling System Based on Artificial Intelligence

- Designed an AGV scheduling system with openTCS
- Utilized Python to develop an API for the scheduling program
- Improved the routing strategy to avoid crashing and increase efficiency

Optical Imaging Laboratory, Shanghai Jiao Tong University

Research Assistant, Supervisor: Sung-Liang Chen

Shanghai, China

Apr 2022 - Feb 2023

Study on Intelligent Detection Algorithm Based on Camera Calibration and Object Recognition

- Led a five-member team to initiate a project to reduce the deviation of the previous algorithm
- Leveraged Python to develop a new algorithm, which significantly increased the precision of circle center identification and simplified the process
- Working on patent preparation and application procedure

PROJECT EXPERIENCE

Thread Library for Operating Systems (Course: Intro to Operating Systems)

Sept 2024 - Oct 2024

- Developed a thread library using C++
- Supported mutexes, conditional variables, and thread management

Primary/Backup Key/Value Service (Course: Intro to Distributed Systems)

Sept 2024 - Oct 2024

- Developed a viewservice to tell the clients the available machines to send requests
- Designed an algorithm to synchronize between primary and backup servers to ensure data correctness when some servers fail

Computer Game Development (Course: Intro to Engineering)

May 2022 - Aug 2022

- [BrickNite](#): developed a game to break the bricks, with a killing boss bonus and tools selection after passing each level
- [Rhythm Gunner](#): applied Elm to develop a music game where players can shoot enemies with the rhythm of the music

Independent GitHub Projects

Jan 2022 - Present

- [courseSelector](#): developed an automatic course selection tool for students at UM-SJTU Joint Institute to use multiple threads for real-time course availability check and selection
- [auto-duo](#): automatically approved each Duo push request, no need to click on the cellphone
- [py-html-graph](#): developed a high-performance interactive Numpy line chart viewer (which could support multi-variable, zoom and pan), a good supplement for the awful matplotlib
- [openai-playground](#): applied other openai-compatible API services in OpenAI Playground to test and debug other chatting AI services easily
- [direct-mmap](#): developed Numpy memory-mapped array with direct I/O without sequential read caching, which increased the speed of random read by 200-900% in different cases

EXTRACURRICULAR EXPERIENCE

Core Member, Alternate Reality Initiative, UMich

Aug 2023 - Present

Core Member, Quantitative Investment Society, UMich

Aug 2023 - Present

Core Member, Michigan Data Science Team, UMich

Aug 2023 - Dec 2023

SKILLS

Languages: English (fluent), Mandarin (native)

Programming languages: Python, C++, C, Java, SQL, JavaScript, Go

Other Tools: VS Code, PyTorch, OpenCV, Git, Docker