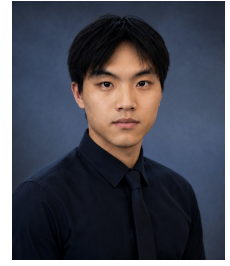


Tianlang Chen (Jackie), *B.S.E. Candidate*

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Education

- 2025 – present **University of Michigan, Ann Arbor** Bachelor's Degree, **Data Science**
Relevant Coursework: *Machine Learning, Computer Graphics & Generative Models, Computational Linguistics, Algorithm & Data Structure, Probability & Statistics, Statistics & Data Analysis*
- 2023 – 2025/05 **Shanghai Jiaotong University** Bachelor's Degree, **Mechanical Engineering**
Relevant Coursework: *Applied Linear Algebra, Dynamics System, Design & Manufacturing, Dynamics & Vibrations*

Research

- 2026 – present **Scalable Split Learning and Quantization for Vision-Language Models in Medicine** *University of Michigan*
- Extending a two-partition multimodal split-learning framework toward multi-server training, enabling collaborative fine-tuning of vision-language models while sensitive data remain localized.
 - Evaluating low-bit intermediate-representation quantization across medical VQA benchmarks to characterize the trade-off among model utility, information preservation, and end-to-end communication efficiency.
 - Studying privacy leakage from transmitted multimodal representations under feature-inversion attacks, assessing whether compression can reduce reconstruction risk without sacrificing downstream model performance.
- 2026 – present **Foundation-Model Fine-Tuning and AI Infrastructure for Regulatory Genomics** *University of Michigan*
- Fine-tuned the full EPCOT genomic foundation model on HPAP Type 1 Diabetes snMultiome data to predict gene expression from chromatin accessibility, aligning donor-by-cell-type RNA profiles with base-pair-resolution ATAC windows.
 - Designed scalable AI infrastructure for high-resolution multi-omics learning, integrating memory-efficient data systems, parallel preprocessing and loading, distributed training, and reproducible cluster execution.
 - Developed gene-centered and cell-specific evaluation baselines to separate cell-state signal from gene-identity effects in standard across-gene correlation metrics.
 - Developed a privacy-conscious pipeline for deriving personalized genomic representations from chromatin profiles and integrating them into EPCOT inference, with allele-specific, false-positive, and cross-donor validation.

Research (continued)

- 2026 – present  **LLM-Assisted Incentive Design for Mobility Systems** *University of Michigan*
- Engineered schema-aware prompts and strict structured-response validation to simulate heterogeneous traveler decisions with LLMs and convert model outputs into rewards for incentive design.
 - Designed a scalable LLM inference architecture with batched generation, reusable response pools, and interchangeable serving back ends to support large combinatorial policy simulations.
 - Integrated multi-armed bandits and constrained budget allocation, then evaluated traveler-attribute and prompt sensitivity with replicated analyses, model-based importance, held-out decision criteria, and seed controls.
- 2026 – present  **Full-Stack Development of an AI-Assisted Platform for Scientific Data Analytics** *University of Michigan, Ann Arbor*
- Developed an AI-assisted full-stack platform that transforms heterogeneous experimental data into interactive, validated scientific model-fitting workflows for materials research.
 - Integrated LLM-guided data understanding with structured safeguards and human-in-the-loop verification to automate schema interpretation and preprocessing across user-uploaded datasets.
 - Trained a physics-informed neural network to initialize nonlinear fitting and designed a lightweight inference pipeline combining learned representations with constrained scientific optimization and uncertainty-aware model comparison.

Internship

- 2024 – 2025  **Mars Asia, Global IT Service Center** *WeCom full-stack development*
- Contributed to WeCom (Enterprise Wechat) full-stack secondary development using JavaScript, Node.js, and Vue.js to support internal enterprise communication and workflow tools.
 - Supported API implementation, interface development, data migration, and information retrieval features across internal service platforms.
 - Built and assisted with automation workflows to improve operational continuity during system migration.

Skills

- | | |
|----------------------|--|
| Coding & Programming |  Python, C, C++, JavaScript, SQL, R, Matlab, Java, Bash, Git |
| ML & Data |  PyTorch, scikit-learn, Gaussian Processes |
| LLM & Agentic AI |  Prompt Engineering, Structured Prompting, Retrieval-Augmented Generation, LLM Workflow Design, Agent-Guided Code Generation & Troubleshooting, Output Validation, Hallucination Mitigation |
| Databases |  MySQL, SQLite. |
| Web Dev |  HTML, CSS, JavaScript, Node.js, Vue.js. |
| Languages |  English, Mandarin, Cantonese |
| Tools |  Solidworks, Blender, MATLAB, Slurm / HPC |

Additional Experience

Contests

2025/01  **The Mathematical Contest in Modeling (MCM-COMAP)**, Honorable Mention.

Teaching Assistant

2025/03  **TA for English Academic Writing**

2025/05  **TA for General Physics**