

# Chenyi Tong

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## EDUCATION

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### University of Wisconsin–Madison

*M.S. in Data Science*

*Sep. 2025 – May 2027 (Expected)*

- **Relevant Coursework:** CS 639 (DL for NLP), STAT 453 (DL & Gen Models), STAT 479 (Interpretable ML)

### Wuhan University

*B.S. in Mathematics (National Plan for Strengthening Basic Disciplines)*

*Sep. 2022 – Jun. 2026 (Expected)*

- **GPA:** 88.6/100 (Top 10%)

## RESEARCH INTERESTS

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- **LLM Agent Applications:** tool-augmented agents for multi-step workflows, retrieval, and automation; evaluation and reliability for long-horizon tasks.
- **Post-training for LLMs:** fine-tuning LLMs to follow instructions more reliably and use tools more consistently in multi-step agent workflows.

## PUBLICATIONS

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### • ARLArena: Demystifying Policy Gradient Stability in Agentic Reinforcement Learning

Xiaoxuan Wang, Han Zhang, Haixin Wang, Yidan Shi, Ruoyan Li, Kaiqiao Han, **Chenyi Tong**, Haoran Deng, Alexander K. Taylor, Renliang Sun, Yanqiao Zhu, Jason Cong, Yizhou Sun, Wei Wang

*Submitted to the International Conference on Machine Learning (ICML), 2026 (under review)*

### • TOAST: Multi-Agent Collaborative System for Symbolic Regression

Xinyu Pan, Yanqiao Zhu, **Chenyi Tong**, Kaiqiao Han, Jingru Gan, Xiao Luo, Yizhou Sun, Wei Wang

*Submitted to the Annual Meeting of the Association for Computational Linguistics (ACL), Jan 2026 (under review)*

### • CrystalForge: Closed-Loop Agentic Discovery of Novel Crystal Structures Under Property and Stability Constraints

**Chenyi Tong** (with collaborators)

*Target: Conference on Language Modeling (COLM), 2026 (manuscript in preparation)*

## RESEARCH EXPERIENCE

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### Research Collaborator (Remote)

Oct. 2025 – Present

*ScAI Lab, University of California, Los Angeles*

- Developed protocol-aligned baselines and standardized evaluation pipelines for agentic RL benchmarks, enabling consistent comparisons across runs.
- Built trajectory-level diagnostics to study failure patterns in long-horizon rollouts and guide agent-system refinement.

### Research Assistant

Oct. 2025 – Present

*University of Wisconsin–Madison*

- Advisor: Prof. Xiao Luo
- Designed a ReAct-style, tool-augmented agent for multi-objective materials discovery, integrating retrieval and iterative propose-evaluate-refine loops.
- Implemented a reproducible evaluation and ablation pipeline and ran large-scale experiments to benchmark agent behavior across tasks and settings.

### Research Assistant

Mar. 2025 – Oct. 2025

*The Hong Kong University of Science and Technology*

- Advisor: Prof. Nan Jiang
- Modeled physician scheduling as a chance-constrained bilevel program, capturing hierarchical decisions and probabilistic requirements; derived tractable reformulations to enable computation.
- Implemented and evaluated scenario-based methods in Gurobi; presented results in a research talk ([slides](#)).

## PROJECTS

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- VHaLM: Multi-Image Haiku Generation** | *PyTorch, CLIP, T5, LoRA* Fall 2025
- Built VHaLM, a two-stage system: fuse frozen CLIP features to produce a unified multi-image description (LoRA-T5), then generate 5–7–5 haiku with rule-based structure checks and LLM reranking.
  - Mined 2K+ coherent MS-COCO image triplets via a CLIP kNN graph and created pseudo-supervision with LLM-based caption fusion; validated the pipeline and analyzed trade-offs between meter strictness and visual relevance.

## HONORS AND AWARDS

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- **Outstanding Teaching Assistant for Fall 2024 Semester**, Wuhan University, Mar. 2025
- **University Scholarship for 2023–2024 Academic Year**, Wuhan University, Sep. 2024, Sep. 2023
- **Huang Zhangren Special Scholarship for Merit Student**, Wuhan University, Sep. 2023
- **Second Prize 34th Chinese Chemistry Olympiad of Zhejiang Province**, Jinhua No.1 High School, Sep. 2020

## TECHNICAL SKILLS

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**Languages:** Python, C, SQL

**Systems/Tools:** Linux, Git, HTCondor

**Libraries:** PyTorch, Gurobi, pandas, NumPy

## TEACHING AND TEACHING ASSISTANTSHIP

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### Course Grader

Sep. 2025 – Dec. 2025

*Department of Mathematics, University of Wisconsin–Madison*

- **Math 535: Mathematical Methods in Data Science** (Graduate level)
- **Instructor:** Prof. Yukun Yue
- Graded assigned homework submissions and coordinated with the instructor on grading decisions and additional submissions.

### Teaching Assistant

Sep. 2024 – Jan. 2025

*School of Computer Science, Wuhan University*

- **C Programming** (Undergraduate level)
- **Instructor:** Prof. Yangfan He
- Provided lab support and resolved coding issues for 50+ students, and assisted in grading and analyzing assignment performance.
- Recorded weekly walkthrough videos to clarify key concepts.

## OTHER EXPERIENCE

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### Quantitative Finance Research Assistant

Oct. 2022 – May. 2025

*Wuhan University & E Fund Management Co., Ltd.*

- **Supervisor:** Haodong Huang, Fund Manager at E Fund Management
- Pair Trading: Developed and implemented pair trading strategies to exploit price relationships between correlated assets.
- Style Rotation Strategy Research: Researched and developed strategies for style rotation to optimize portfolio performance based on market conditions.
- Dividend Factor Timing: Constructed dividend-based timing signals using fundamental and macroeconomic indicators; validated their predictive power on sector rotation and high-dividend stock strategies.

### Summer School Student

Jul. 2024 – Aug. 2024

*Westlake University*

- Studied number-theoretic aspects of Diophantine approximation and its applications to integer equations.
- Learned stochastic simulation techniques with applications to probabilistic modeling.

### Summer School Student

Jul. 2023 – Aug. 2023

*University of Cambridge*

- **Research Topic:** Reinforcement Learning
- **Group Project:** Multi-Agent Deep Learning Algorithm MADDPG
- **Grade:** A+