MINGZE JIANG

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EDUCATION

TsinghuaUniversity *Aug 2023-Jun 2027(expected)*

B.E. in Computer Science and Technology

GPA: Overall GPA of **3.95**/4.00 **Rank: 7**/172 (**top 5%**)

GRE 339 (Quantitative 170 / Verbal 169) + 3.5 (AW)

TOEFL 113 (Listening 30) || IELTS 8.0 (Listening 9.0 / Reading 9.0)

RELEVANT COURSEWORK: Introduction to Artificial Intelligence (**A+**), Introduction to Complex Analysis (**A+**), Software Engineering (**A**+), Fundamentals of Programming (**A**), Data Structures and Algorithms (**A**), Digital Image Processing (**A**), Programing and Training (Python) (**A**), Fundamentals of Computer Graphics (**A**), Digital Logic Experimentation (**A**), Physics for Scientists and Engineers (**A**), Calculus (**A**), Discrete Mathematics (**A**), Probability and Statistics (**A**)

PUBLICATIONS

- **Mingze Jiang**, Xueyang Li, John Kheir, Alec Girten, Yiyu Shi. *"LightRefine-PCXR: A Lightweight Refinement Framework for Efficient Medical Device Suppression in Pediatric Chest X-Rays"*, submitted to Int. Conf. Medical Imaging with Deep Learning (MIDL), 2026.
- Xueyang Li, **Mingze Jiang**, Gelei Xu, Jun Xia, Mengzhao Jia, Danny Chen, Yiyu Shi. *"AT-CXR: Uncertainty-Aware Agentic Triage for Chest X-rays"*, submitted to Int. Conf. Design Automation and Test in Europe (DATE), 2026.

RESEARCH EXPERIENCES

Mori Laboratory, *Nagoya University, Japan* *Visiting Student, Advisor: Prof. Kensaku Mori* *Jan 2024-Feb 2024*

- **Medical Image Processing Fundamentals and Endoscopic Super-resolution Imaging**
  - Investigated resolution limitations of endoscopic imaging due to small sensor sizes.
  - Developed a multi-frame registration and fusion method to enhance image clarity and sharpness, improving endoscopic detail.

Knowledge Engineering Group, *Tsinghua University* *Group Member, Advisor: Prof. Yuxiao Dong* *Mar 2024-Jul 2025*

- **Multimodal Large Models for Visual Understanding & Generation**
  - Worked on large-scale multimodal AI models for visual understanding and generation.
  - Contributed to dataset construction and model fine-tuning for multimodal tasks in the CogAgent project, focusing on vision-language models.

iSURE Program, *University of Notre Dame, USA* *Research Intern, Advisor: Prof. Yiyu Shi* *Jul 2025-present*

on-site Jul 2025-Aug 2025, remote since Sep 2025

- **AI Framework for Pediatric Critical Care: Automated CXR Analysis & Anomaly Detection**
  - Worked with real pediatric ICU chest X-ray data to develop an AI framework for clinically meaningful quantification and decision support (*Collaboration with Boston Children's Hospital/Harvard Medical School*).
  - Proposed LightRefine-PCXR, a lightweight, anatomy-preserving framework for medical device suppression in pediatric chest X-rays that combines coarse inpainting with localized refinement to achieve high-fidelity restoration at low training cost.
  - Proposed a topology-aware deformable centerline-based segmentation method for tubular devices in pediatric chest X-rays, targeting continuity-preserving multi-class predictions under overlap and occlusion.
  - Contributed to the development of an agentic AI-based triage system for chest X-ray assessments, integrating uncertainty-aware decision-making to optimize clinical workflows and support reliable decision support.

SCHOLARSHIP

2025 **Comprehensive Excellence Scholarship**, Tsinghua University

2024 **Comprehensive Excellence Scholarship**, Tsinghua University

2023 **Freshman Scholarship**, Tsinghua University

Honors & Awards

2022 **National Gold** in 36th Annual AAPT (**American** Association of Physics Teachers) Physics Bowl Contest
2022 **Global Gold** in **British** Physics Olympiad Senior Physics Challenge
2022 **Global Silver** in **British** Physics Olympiad Competition (BPHO R2)
2022 **National Silver, Global Top 150** in **Canada** SIN (Sir Isaac Newton) Contest
2022 **Canadian Top 20, China National Silver** in CAP (**Canadian** Association of Physicists) High School Physics Prize
2021 **Top Gold** in **British** Physics Olympiad Competition (BPHO R1)

Service & Leadership

Field Research on Technology Equity and Digital Divide
Core Member *Jul 2024-Aug 2024*

- Conducted literature research on regional historical context and industrial policies, synthesizing findings into a preliminary research report of over 10,000 words.
- Investigated regional development and industrial upgrading, analyzing pathways to deploy emerging technologies (e.g. big data, IoT, AI) in inland areas with limited geographical advantages.
- Published research outcomes in news media to raise public awareness and advocated for regional computing resource development and digital technologies implementation.
- Awarded the Tsinghua University Student Social Practice Silver Award.

Association of Student Academic Development of Tsinghua University
Core Member *Mar 2025-present*

- Directed the Promotion Team for Tsinghua's "Buddy Program", a peer-mentorship initiative that builds learning communities through structured online/offline engagement, helping students establish consistent academic routines.
- Organized the Reading Initiative and Graduation Check-in Campaign, produced and published multiple official account articles achieving over 1,000 views.

Inspire Epistolary Mentorship Program of Tsinghua University *Remote*
Volunteer *Feb 2025-Jul 2025*

- Built cross-regional mentorship relationships with secondary school students in under-resourced regions via long-term handwritten letters, fostering personal connection and perspective sharing.

Yinhe Correspondence Program of Tsinghua University *Remote*
Volunteer *Sep 2024-Jan 2025*

- Participated in a special education volunteer initiative, exchanging handwritten letters with hearing-impaired students at Beijing Qiyin Experimental School to foster social connection, provide mentorship, and promote mutual understanding and emotional support.