

MINGZE JIANG

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EDUCATION

Tsinghua University

Aug 2023-Jun 2027(expected)

B.E. in Computer Science and Technology

- **GPA: 3.9 / 4.0 Rank: 8 / 194 (top 5%)**
- **Standardized Tests:** 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+), Data Structures & Algorithms (A), Digital Image Processing (A), Fundamentals of Computer Graphics (A), Physics for Scientists & Engineers (A), Calculus (A), Discrete Mathematics (A), Probability and Statistics (A)

PUBLICATIONS & MANUSCRIPTS

- **Mingze Jiang**, Xueyang Li, John Kheir, Alec Girtten, Yiyu Shi. “*LightRefine-PCXR: A Lightweight Refinement Framework for Efficient Medical Device Suppression in Pediatric Chest X-Rays*”, accepted at Int. Conf. on Medical Imaging with Deep Learning (MIDL), 2026. [\[pdf\]](#)
- Xueyang Li, **Mingze Jiang**, Gelei Xu, Jun Xia, Ching-Hao Chiu, Mengzhao Jia, Danny Chen, Yiyu Shi. “*CRC-Router: Risk-Constrained Routing for Medical Agentic AI Systems*”, submitted to IEEE Int. Conf. on Bioinformatics and Biomedicine (BIBM), 2026. [\[pdf\]](#)
- Kunzan Liu, Kirti Nath, Guhan Qian, Jiashu Han, **Mingze Jiang**, Li-Yu Yu, Honghao Cao, Ellen L. Kan, Linda G. Griffith, Harikesh Wong, Sixian You. “*Decoding Cellular Phenotypes in Label-Free Nonlinear Imaging of Living Tissues*”, submitted to SPIE Photonics West, 2027.

RESEARCH EXPERIENCES

Computational Biophotonics Lab, MIT

Cambridge, USA

Research Intern, Advisor: [Prof. Sixian You](#)

(on-site since Jul 2026) Feb 2026-present

- **AI for Label-Free Biomedical Imaging**
 - Developed self-supervised cell embeddings for label-free THG microscopy, learning phenotype-relevant representations from cellular morphology and microenvironment for immune-cell analysis.
 - Developed cross-modal matching between SLAM microscopy and spatial transcriptomics to interpret myelin-related imaging features and characterize aging- & APOE-associated brain changes.

Sustainable Computing Lab (iSURE Program), University of Notre Dame

South Bend, USA

Research Intern, Advisor: [Prof. Yiyu Shi](#)

(on-site Jul-Aug 2025) May 2025-Feb 2026

- **AI for Pediatric Critical-Care (Collaboration with Boston Children’s Hospital and Harvard Medical School)**
 - Developed LightRefine-PCXR for anatomy-preserving device suppression, achieving superior restoration quality while using less than 50% of the trainable parameters and peak memory of full fine-tuning.
 - Established the first pediatric CXR device dataset with a geometry-aware annotation pipeline, and developed robust structure-aware methods for device segmentation.
- **Reliable Medical Agentic AI**
 - Focused on reliable medical agentic AI, combining multi-signal uncertainty with conformal risk control and achieved the best risk-coverage trade-off among baselines (3.9% risk at 91.3% coverage).

Knowledge Engineering Group, Tsinghua University

Beijing, China

Group Member, Advisor: [Prof. Yuxiao Dong](#)

(on-site) Mar 2024-May 2025

- **Multimodal Foundation Models for Visual Reasoning**
 - Explored multimodal foundation models for visual understanding and generation, focusing on tool-augmented reasoning and multimodal interaction.
 - Fine-tuned CogAgent-9B for calculator-assisted reasoning and built a scalable instruction-data pipeline.

Mori Laboratory, Nagoya University

Nagoya, Japan

Visiting Student, Advisor: [Prof. Kensaku Mori](#)

(on-site) Jan 2024-Feb 2024

- **Multi-Frame Endoscopic Super-Resolution**
 - Investigated multi-frame endoscopic super-resolution through robust registration and fusion.
 - Enabled high-fidelity reconstruction under the resolution constraints of miniaturized imaging systems.

SCHOLARSHIP

2025 **Comprehensive Excellence Scholarship**, Tsinghua University (Top 5%)

2024 **Comprehensive Excellence Scholarship**, Tsinghua University (Top 5%)

2023 **Freshman Scholarship**, Tsinghua University (Top 2%)

2026 **Tsinghua “TOP OPEN” Undergraduate Overseas Academic Research Program** (Selected Awardee)

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 (BPHOR2)

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

- Researched regional development, industrial policy, and emerging technology adoption in inland regions; published findings in news media and received the *Tsinghua University Student Social Practice Silver Award*.

Association of Student Academic Development of Tsinghua University

Core Member

Mar 2025-present

- Led promotion for Tsinghua’s Buddy Program and organized campus reading and graduation campaigns, with published content reaching 1,000+ views.

Inspire Epistolary Mentorship Program of Tsinghua University

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

Volunteer

Sep 2024-Jan 2025

- Exchanged handwritten letters with hearing-impaired students at Beijing Qiyin Experimental School, fostering social connection, mutual understanding, and emotional support.