

Yunqian Luo

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EDUCATION

Tsinghua University

Institute for Interdisciplinary Information Sciences

Beijing, China

Aug. 2023 – Jul. 2026 (expected)

- First-year M.S. student on computer architecture, supervised by [Mingyu Gao](#).

Tsinghua University

Institute for Interdisciplinary Information Sciences

Beijing, China

Aug. 2019 – Jul. 2023

- B.S. on computer science, in **Yao Class**, a special pilot CS program led by Prof. Andrew C. Yao for talented students.
- **Overall GPA:** 3.79/4.00 (ranked 37/62). **GPA of major courses:** 3.92/4.00.
- **Specialized course (A or A+):** Introduction of Mathematical Modelling, Introduction to Artificial Intelligence, Calculus, Mathematics for Computer Science, Introduction to Databases, Computer Architecture, Advanced Computer Graphics, Operating System

Huanggang High School

Mathematical Olympiad Class

Hubei, China

Aug. 2016 – Jul 2019

- **Chinese National Team of in Russian Mathematical Olympiad**
- **Chinese Training Camp for International Mathematical Olympiad**

AWARDS

- **National Inspiration Scholarship** **Oct. 2020**
- **Freshman Scholarship, Tsinghua University** (Awarded to about 5% students) **Oct. 2019**
- **Bronze Medal in Russian Mathematical Olympiad** **Mar. 2019**
- **Gold Medal in Chinese Mathematical Olympiad** (Ranked 22/388) **Nov. 2018**

EXPERIENCE

Tsinghua Innovative Data-centric Efficient Architecture Lab (IDEAL)

Mentor: [Mingyu Gao](#)

Beijing, China

Sept. 2021 – Present

- My research interest is mainly on trusted execution environment (TEE), analyzing and designing algorithms and systems for efficient hardware-assisted secure computation.
- Investigated existing TEE implementations, analyzed their security guarantees and flaws.
- Working on improving algorithms based on secure computation primitives such as Oblivious RAM (ORAM).

ISCAS, Programming Language and Compiler Technology (PLCT) Lab

Intern in Chisel team

Beijing, China

Oct. 2021 – Present

- Designing an open source [RISC-V Soc](#) with a long vector architecture, expected to be taped out this year.
- Working on assessing micro-architecture decision choices, developing verification toolchain and infrastructure.

PUBLICATIONS

BULKOR: Enabling Bulk Loading for Path ORAM

Xiang Li, Yunqian Luo, Mingyu Gao

Apr. 2022

- Accepted in [S&P 2024 Summer](#).
- Based on Path ORAM, a special data structure to resist side channel attacks for general computing, we proposed a new algorithm to initialize it over 5x faster than existing methods in most cases.
- Contributed to part of the algorithm design, and provided the full proof of the correctness and performance bound.

PROJECTS

Advanced Computer Graphics Course Lab

github.com/SharzyL/rt

- A high performance renderer supporting various ray tracing algorithms (path tracing, PPM, SPPM).
- Modern C++ programming and multi-thread performance tuning.

Computer Architecture Course Lab

- Wrote a highly optimized RISC-V assembly code for 2D-convolution.
- Implemented hazard detection, branch prediction and cache control for a 5-stage pipelined RISC-V processor.

SKILLS

Programming Languages: (Experienced) C++, Python, (Familiar) JavaScript, Golang, Rust, Scala/Chisel, Java

Tools: Linux, Git, LaTeX (TeX), Nix, Mathematica

Languages: Chinese (native), English (TOEFL iBT 105), Japanese (basic reading and speaking)

Hobbies: Open-source contributions, typography, linguistics, sports