Yue Tu

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Education

University of Chicago
M.S., Computational and Applied Mathematics
Oct. 2024 – now

- Grades: 3A, 4A-, 1B

Sun Yat-sen University
B.S., Computer Science
Sept. 2020 – June 2024

- GPA: 3.9/4.0

Publications & Manuscripts in Preparation

1. **Y. Tu**, J. Liu. *Towards identifying possible fault-tolerant advantages of quantum linear system algorithms in terms of space, time and energy.* arXiv:2502.11239, 2025.
2. **Y. Tu**, L. Jiang. *Quantum advantage in learning mixed-unitary channels.* Manuscript in preparation, 2025. *(Draft available upon request.)*
3. **Y. Tu**, L. Gagliardi. *Localized active space with non-orthogonal state interaction on quantum computers.* In preparation, 2025.
4. A. Sun, **Y. Tu**, Y. Gu, C. Chen, J. Du, X. Zhang. *Archs: A WebAssembly Runtime for Cross-host Heterogeneous Computing in Serverless.* **Under review by HPC**, **[2025]**. *(Draft available upon request.)*

Experience

Quantum Computing
Apr. 2023 – now

- **QLSA resource estimation** — A production level full stack resource cost estimation of QLSA algorithm. Paper finished but still under review. I'm the 1st author and did most of the work. Advisor: Junyu Liu

- **Learning Mixed Unitary Channel** *(Draft available upon request.)* — A quantum algorithm for learning mixed unitary channels which proved to be optimal. The paper is about to be finished and I'm the 1st author. Advisor: Liang Jiang

- **LAS-NOSI** — Combining quantum algorithm with advanced computational chemistry algorithm for better accuracy and lower cost. It's a working projector and I'm the main contributor. Advisor: Laura Gagliardi

Computer System
June 2021 – Sept. 2023

- **Zero-trace** — Linux kernel debugging tool. Second Prize (national), National Computer System Capability Competition (~$1.4k). I implemented low-overhead real time tracing visualization. Advisor: Pengfei Chen

- **WASM-CL** *(Draft available upon request.)* — A Cross platform software platform. I'm the 2nd author and implemented most of the code. Advisor: Xianwei Zhang

- **YatCPU** — Teaching CPU platform for *Principles of Computer Organization*.adopted as the standard course platform. I contributed cpu test framework coding and wrote lab 0 & 1. Advisor: Zhiguang Chen

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Additional

- **Technical:** C/C++, Python, MATLAB, bash

- **English:** TOEFL 108

- **Gaokao:** score 677 (ranked in the top 0.125% in Sichuan)