MUYAO XIAO

(+81) 080-9061-4353
xiao.m.eea5@m.isct.ac.jp
https://www.linkedin.com/in/muyao-haruka-xiao/

EDUCATION

Institute of Science Tokyo (formerly Tokyo Tech) Tokyo, Japan
Ph.D. Student in Mathematical and Computing Science Sept. 2025 – Present

- **Advisor**: Prof. Toshio Endo **Co-advisor** : Dr. Jens Domke (RIKEN R-CCS)
- Research Focus: High-Performance Computing Compilors (LLVM/MLIR).

Georgia Institute of Technology Remote (Part-Time)
M.S. in Computer Science (Specialization: Computing Systems) Aug. 2023 – Dec. 2025

- Core Coursework: Advanced Operating Systems, High-Performance Computing.

The University of Tokyo Tokyo, Japan
Master of International Studies (Thesis on Deep Learning) Oct. 2016 – Mar. 2019

- **Advisor**: Prof. Riki Honda
- Thesis: *Synthesis and Selection of Seismic Design Input Ground Motions with Deep Learning* (Applied Keras).

Zhejiang University Hangzhou, China
B.E. in Civil Engineering Sept. 2012 – Jul. 2016

INDUSTRIAL EXPERIENCE

Rakuten Group, Inc. Tokyo, Japan
Full Time, Applications Engineer (High-Performance Backend) Oct. 2022 – Aug. 2025

- Engineered large-scale real-time ad bidding systems with Go and Java, handling massive throughput with strict low-latency requirements.

DeNA China Shanghai, China
Full Time, Backend Developer (Infrastructure & Gaming) Sept. 2020 – Jul. 2022

- Developed Go backend infrastructure for gaming platforms (20k+ QPS), utilizing Kubernetes and Docker for container orchestration.

Accenture (China) Co., Ltd. Shanghai, China
Full Time, Software Engineer Apr. 2019 – Aug. 2020

SELECTED RESEARCH & TECHNICAL PROJECTS

OpenMP to StableHLO Lowering for AI Accelerators
Ph.D. Research (Ongoing) Oct. 2025 - Present

- Developing a novel compilation bridge to offload **OpenMP** regions in Fortran applications to **XLA**, enabling legacy HPC codes to run on modern hardware

OpenMP Offloading Toolchain for Vortex GPGPU
CS8903 Independent Research, Georgia Tech Jan. 2025 – Apr. 2025

- Enabled OpenMP target offloading to **Vortex** (RISC-V based GPGPU) by diagnosing and fixing critical compilation errors in the Clang Frontend and Driver.
- Patched the LLVM/OpenMP runtime to resolve execution failures, verifying correctness on the Vortex simulator, and contributed fixes to the open-source toolchain (GitHub: https://github.com/mooxiu/llvm/commits/vortex_2.x/).

Skills

Core Technologies: C++/C/Go/Python, LLVM/MLIR, OpenMP/MPI, CUDA (Basic)

Cloud & Infra: Kubernetes, Docker, Linux, Git, AWS, GCP

Languages: Chinese (Native), English (Proficient, TOEIC: 945), Japanese (JLPT N1)

Certificates

Certified Kubernetes Application Developer (CKAD)
The Linux Foundation Aug. 2024

AWS Certified Solutions Architect – Associate
Amazon Web Services (AWS) Aug. 2023

Publications & Posters

1. **Muyao Xiao**, Ivan R. Ivanov, Jens Domke, Toshio Endo. *Bridge Over Troubled Water: Offloading OpenMP Regions to AI Compiler via StableHLO/XLA*. SCA/HPCAsia 2026 **(Poster Track)**.
2. Di Lin, **Muyao Xiao**, Riki Honda. *Synthesis of Design Input Ground Motions with Feature Identification by Autoencoder*. Japan Society of Civil Engineers Annual Meeting, 2020.

Others

- Awarded Science Tokyo Tsubame Scholarship for Doctoral Students (Jan.2026 –)