Seita **Tsuboi**

Tokyo, Japan

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Summary

M.S. student at the University of Tokyo researching compilers and control architectures for photonic quantum computers, and software engineer with production experience in parametric 3D/CAD applications (C#/.NET, Unity), full-stack web development, and Azure cloud solutions. Selected for the IPA MITOU Target Program (2026); first author of two IEEE QCE 2026 posters and an arXiv preprint.

Education

The University of Tokyo (東京大学)

Tokyo, Japan

M.S. in Information and Communication Engineering (情報理工学系研究科 電子情報学専攻) — *Apr. 2025 – Mar. 2027 (Expected)*

- Research at Kadomoto Laboratory on compilers and control architectures for photonic quantum computers.

The University of Tokyo (東京大学)

Tokyo, Japan

B.S. in Information and Communication Engineering (工学部 電子情報工学科) — *Apr. 2021 – Mar. 2025*

- Research at Hasegawa Laboratory on free-energy estimation for open quantum systems based on the Jarzynski equality, using Python numerical simulations.

Tokyo Gakugei University Senior High School (東京学芸大学附属高校)

Tokyo, Japan

High School Diploma — *Apr. 2017 – Mar. 2020*

Experience

IPA MITOU Target Program – Quantum Computing

Tokyo, Japan

Creator (Selected Project) — *Jun. 2026 – Present*

- Developing a simulator platform for RTL-level verification of control systems for measurement-based photonic quantum computers.

Microsoft Japan Co., Ltd.

Tokyo, Japan

Cloud Solution Architect Intern — *Aug. 2025 – Sep. 2025*

- Delivered a session on Copilot in Azure at Microsoft AI Tour Osaka to 100+ customers, including a live demo.
- Developed an Azure Bicep generator with LangGraph and Azure OpenAI Service; participated in Microsoft Global Hackathon 2025.
- Supported customer engagements and technical workshops in the CSA-Infra team.

WOGO Inc.

Tokyo, Japan

Software Engineer Intern — *Aug. 2024 – Present*

- Developed a desktop application for manufacturing in C# / .NET (WPF) that automatically generates 3D models and engineering drawings from specifications and parameters, with automated error detection.
- Owned the core generation algorithms, 3D geometry and visualization, and the user interface.
- Built the Unity-based 3D visualization and editing interface for a tool that generates 3D models from 2D drawings (joint development with Sanki Engineering Co., Ltd.).
- Developed full-stack web applications with FastAPI and React/TypeScript, including database design, 3D facial scanning, and parametric modeling features.

Intelligent Force Co., Ltd.

Tokyo, Japan

IT Consultant & Software Engineer Intern — *Apr. 2023 – Oct. 2024*

- Supported enterprise Azure deployments and Copilot adoption, and provided AI consulting to enterprise clients.
- Created proposal materials on IT strategy, AI adoption, and cloud infrastructure.

Publications & Presentations

[1] **S. Tsuboi**, T. Kasamura, L. Itoh, M. Tsuboi, T. Hatori, and J. Kadomoto, "Optimal Measurement Rounds for Perfect Encoded Fusion," *arXiv:2611.22412 [quant-ph]*, Nov. 2026.

[2] **S. Tsuboi**, L. Itoh, T. Kasamura, and J. Kadomoto, "QuStitch: An Interactive Multi-Level Visualization for Lattice Surgery Quantum Computation," *IEEE Quantum Week 2026 (QCE26)*, Poster, 2026.

[3] **S. Tsuboi**, L. Itoh, T. Kasamura, and J. Kadomoto, "Feed-Forward Rate Matching for Signal-Shifted Measurement-Based Quantum Computing," *IEEE Quantum Week 2026 (QCE26)*, Poster, 2026.

[4] **S. Tsuboi**, L. Itoh, T. Kasamura, and J. Kadomoto, "QuStitch：格子手術量子計算のための多階層可視化システム," *IEICE Society Conference 2026*, 2026 (in Japanese).

[5] **S. Tsuboi**, N. Ishida, and Y. Hasegawa, "Unital への外挿に基づく自由エネルギー推定," *IEICE Technical Committee on Quantum Information Technology (QIT52)*, Oral, May 2025 (in Japanese).

Skills

Programming	Python, C#, TypeScript / JavaScript, C / C++, Verilog / SystemVerilog
Frameworks	.NET (WPF), Unity (R3, UniTask), React, Next.js, FastAPI, Node.js, PyTorch
Quantum	Qiskit, Stim
Cloud & Tools	Azure, AWS, Docker, GitHub Actions, MySQL, PostgreSQL, Blender
Certifications	Microsoft Certified: Azure Solutions Architect Expert, Azure Administrator Associate
Languages	Japanese (Native), English (TOEFL iBT 87)

Activities

2025	**Participant,** UTokyo Qiskit Fall Fest 2025	*Tokyo, Japan*
2021–24	**Vice Captain,** Field Hockey Club, The University of Tokyo (運動会ホッケー部)	*Tokyo, Japan*
2011–17	**International Experience,** Lived in Hong Kong for six years	*Hong Kong*