

Sho Kuno

Machine Learning Researcher & Algorithm Engineer

Japanese (Native), English (TOEFL iBT 103, IELTS 7.5)

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Education

- **M.S. Mathematical Informatics** 2024–2026 (Expected)
University of Tokyo, Graduate School of Information Science and Technology
Major: mathematical informatics
WINGS-IIW Fellowship recipient
- **B.S. Mathematical Engineering and Information Physics** 2019–2024
University of Tokyo, Faculty of Engineering
Major: mathematical informatics
- **Exchange Student** Sep 2021–Sep 2022
ETH Zurich, Department of Mathematics
Full academic year exchange (USTEP program)

Research Experience

- **Undergraduate Research** Sep 2023–Mar 2024
Mathematical Informatics Lab No.8, University of Tokyo
Supervisor: Prof. Hiroshi Kori
 - Developed reservoir computing models for forecasting forced van der Pol oscillators with phase shifts to the external drive
 - Published in *Machine Learning with Applications* [1] and presented at the Physical Society of Japan annual meeting [3].
- **Graduate Research** Apr 2024–Present
Mathematical Informatics Lab No.3, University of Tokyo
Supervisor: Prof. Kengo Nakajima
 - Designing latent flow matching frameworks for graph generation; benchmarking diffusion-based architectures on Wisteria/BDEC-01.
- **Research Assistant** Feb 2021–Mar 2021
Dr. John Pazdziora
 - Conducted archival research on 19th-century English literature and produced annotated bibliographies supporting grant proposals.

Professional Experience

- **Algorithm Engineer & Machine Learning Researcher** Mar 2024–Present
EQUES Inc. (University of Tokyo spin-off)
 - Enrolled in the METI/NEDO GENIAC consortium, researching and prototyping generative AI models for 2D line-art animation inbetweening.
 - Extended AnimeInbet (ICCV 2023) to support color/Diffusion features pipelines via graph-based vertex matching; co-authored SIGGRAPH 2025 poster submission.
 - Presented research outcomes at Visual Computing 2025 [4].
- **Data Science Intern** Dec 2024
GMO Town WiFi Inc.
 - Applied BERTopic to cluster thousands of app store reviews.

- Delivered dashboard summaries in the internal analytics workspace, enabling weekly sentiment tracking for leadership.
- **Machine Learning Intern** Sep 2024
GMO Internet Group
 - Prototyped an e-commerce site recommendation system using LightGBM-based ranking models and feature pipelines during a 10-day internship, benchmarking against user logs.

Publications & Presentations

- [1] Sho Kuno and Hiroshi Kori. “Forecasting the forced van der Pol equation with frequent phase shifts using Reservoir Computing.” *Machine Learning with Applications*, vol. 19, p. 100654, 2025. DOI: [10.1016/j.mlwa.2025.100654](https://doi.org/10.1016/j.mlwa.2025.100654)
- [2] Ryugo Morita, Sho Kuno, Ryunosuke Tanaka, Rongzhi Li, Hoang Dai Dinh, and Issey Sukeda. “SAWNA: Space-Aware Text to Image Generation.” SIGGRAPH 2025 Posters. DOI: [10.1145/3721250.3743023](https://doi.org/10.1145/3721250.3743023)
- [3] Sho Kuno and Hiroshi Kori. “Time Series Prediction of Shift Work-Simulated Forced Oscillators using Reservoir Computer.” 79th Annual Meeting of the Physical Society of Japan, Hokkaido University, September 16–19, 2024. **Oral** presentation.
- [4] Sho Kuno, Ryugo Morita, Ryunosuke Tanaka, Rongzhi Li, Hoang Dai Dinh, and Issey Sukeda. “CAGI: Color-Informed Anime Graph Inbetweening.” Poster presented at Visual Computing 2025, Waseda University, September 7–10, 2025. **Poster** presentation.

Scholarships

- **WINGS-IIW Fellowship:** ¥180,000/month for 3.5 years starting Fall 2025
- **Toyota Riken Scholarship:** ¥1,000,000 for overseas graduate school preparation (1 year)

Teaching Assistantships

- **Machine Learning & Optimization:** University of Tokyo Extension, Aug 2025 – Present

Technical Skills

- **Programming:** Python (5+ yrs), Rust (hands-on), C, MATLAB
- **Generative AI:** PyTorch, Diffusion & Flow Matching, Graph ML, Transformers, Hugging Face
- **Data & Tooling:** Pandas, NumPy, Matplotlib, BERTopic, Wisteria/BDEC-01 HPC, Microsoft Azure, Docker, Singularity, Git, ComfyUI, Streamlit