

# Sho Kuno

Machine Learning Researcher & Algorithm Engineer

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

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## Education

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- **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

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- **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

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- **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

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- [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

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- **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

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

## Technical Skills

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- **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