

Kaito Baba

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EDUCATION

The University of Tokyo, Graduate School of Information Science and Technology Tokyo, Japan
Master of Information Science and Technology Apr. 2025–Mar. 2027 (expected)
Supervisor: Prof. Hideki Nakayama

The University of Tokyo Tokyo, Japan
Bachelor of Engineering in Mathematical Engineering and Information Physics Apr. 2021–Mar. 2025
Supervisor: Prof. Taiji Suzuki

PUBLICATIONS

★: Featured publications

International Conference Proceedings (Refereed)

- Daichi Sato, Duc Minh Vo, Khan Md. Anwarus Salam, Hidenori Shoji, Yuma Matsuoka, Takara Taniguchi, [Kaito Baba](#), and Hideki Nakayama. LAVA Challenge 2025: Advancing Japanese Document Understanding with a Challenging PDF-VQA Benchmark. *The 33rd ACM International Conference on Multimedia*, 2025.
- ★ [Kaito Baba](#), Wataru Nakata, Yuki Saito, and Hiroshi Saruwatari. The T05 System for the VoiceMOS Challenge 2024: Transfer Learning from Deep Image Classifier to Naturalness MOS Prediction of High-Quality Synthetic Speech. *IEEE Spoken Language Technology Workshop (SLT)*, 2024.

Workshop Papers at International Conferences (Refereed)

- ★ [Kaito Baba](#), Chaoran Liu, Shuhei Kurita, and Akiyoshi Sannai. Prover Agent: An Agent-Based Framework for Formal Mathematical Proofs. *ICML Workshop on AI for Math*, 2025.
- [Kaito Baba](#), Ryota Yagi, Junichiro Takahashi, Risa Kishikawa, and Satoshi Kodera. JRadiEvo: A Japanese Radiology Report Generation Model Enhanced by Evolutionary Optimization of Model Merging. *NeurIPS Workshop on AIM-FM: Advancements In Medical Foundation Models: Explainability, Robustness, Security, and Beyond*, 2024.
- Junichiro Takahashi, JingChuan Guan, Masataka Sato, [Kaito Baba](#), Kazuto Haruguchi, Daichi Nagashima, Satoshi Kodera, and Norihiko Takeda. Application of Contrastive Learning on ECG Data: Evaluating Performance in Japanese and Classification with Around 100 Labels. *NeurIPS Workshop on AIM-FM: Advancements In Medical Foundation Models: Explainability, Robustness, Security, and Beyond*, 2024.

Preprints

- [Kaito Baba](#) and Satoshi Kodera. Multi-Modal Multi-Agent Reinforcement Learning for Radiology Report Generation: Radiologist-Like Workflow with Clinically Verifiable Rewards. *arXiv preprint arXiv:2603.16876*, 2026.
- ★ [Kaito Baba](#), Yoshihiko Ozaki, and Shuhei Watanabe. Conditional PED-ANOVA: Hyperparameter Importance in Hierarchical & Dynamic Search Spaces. *arXiv preprint arXiv:2601.20800*, 2026.

Articles

- [Kaito Baba](#). [Optuna v4.5] Gaussian Process-Based Sampler (GPSampler) Can Now Perform Constrained Multi-Objective Optimization. *Medium*, 2025.
- [Kaito Baba](#). [Optuna v4.2] Gaussian Process-Based Sampler Can Now Handle Inequality Constraints. *Medium*, 2025.

Domestic Conference Proceedings

- Daichi Sato, Duc Minh Vo, Khan Md. Anwarus Salam, Hidenori Shoji, Yuma Matsuoka, Takara Taniguchi, [Kaito Baba](#), and Hideki Nakayama. LAVA Challenge: Benchmarking Japanese-English Document Understanding with Large Vision-Language Models. *28th Meeting on Image Recognition and Understanding (MIRU)*, 2025.
- [Kaito Baba](#), Wataru Nakata, Yuki Saito, and Hiroshi Saruwatari. UTMOSv2: Integrated Use of Spectrogram and SSL Features for Naturalness MOS Prediction. *Acoustical Society of Japan Autumn Meeting*, 2024.

AWARDS AND HONORS

–Aug. 2024 4 solo bronze medals in Kaggle competitions

- Won 4 solo bronze medals so far in Kaggle, the world’s largest machine learning competition.

Jun. 2024 **1st place** in 7 out of 16 metrics and **2nd place** in the remaining 9 metrics in the VoiceMOS Challenge 2024 Track1

- Took the above ranking in a global competition to create a machine learning model to predict the naturalness MOS of synthetic speech.
- Mar. 2024 **1st Place** in Hackathon by AIFUL (aihack2024)
- Developed a machine learning model for predicting the credit score of individuals.
- Oct. 2023 Special Prize, **3rd Place** in Hackathon by LIFECARD
- Created a machine learning model for credit scoring.
- Sep. 2023 **World Rank 3** in CodinGame Othello AI competition
- Developed an AI for the game of Othello (Reversi) by combining deep reinforcement learning and heuristic search algorithms.
- Mar. 2023 Special Prize, **4th Place** in the Final Round in Hackathon by SoftBank
- Developed a web application integrated with object detection AI.

WORK EXPERIENCE

- Preferred Networks, Inc.** Tokyo, Japan
Part-time Engineer Jul. 2024–Present
- Developing Optuna, an hyperparameter optimization library, as part of the AutoML team.
- The University of Tokyo Hospital** Tokyo, Japan
Technical Staff (Part-time) May. 2024–Present
- Conducting research and development of medical AI in collaboration with physicians.
- SIGNATE Inc.** Tokyo, Japan
Technical Advisor, Educational Material Creator (Outsourcing) Dec. 2023–May. 2024
- Created materials on RAG (Retrieval-Augmented Generation) and prompt engineering as an LLM Advisor.
 - Created educational materials on data analysis, LLM usage, algorithms, optimization, etc.
- kuzen Inc.** Tokyo, Japan
Full-stack Engineer (Internship) Nov. 2023–Apr. 2024
- Involved in front-end and back-end implementation, as well as the development of a RAG system using LangChain.
- Recruit Co., Ltd** Tokyo, Japan
Datascientist (Internship) Oct. 2023–Dec. 2023
- Worked in the Search Group of the Data Promotion Office, developing a RAG system to improve the internal document search experience.
- The University of Tokyo Edge Capital Partners Co., Ltd. (UTEK)** Tokyo, Japan
Research Assistant Jul. 2023–Apr. 2025
- Conducting data collection, analysis, and predictive model creation for investors.
 - Developing a system for an internal tool.
- LearnWiz Inc.** Tokyo, Japan
Font-end Engineer (Outsourcing) Apr. 2023–Sep. 2023
- Carried out front-end implementation and proposed UI/UX design for web applications.
- GHELIA Inc.** Tokyo, Japan
AI Researcher (Internship) Jan. 2023–Sep. 2023
- Conducted research and development in deep learning related to image recognition.

OTHER EXPERIENCE

- Sorbonne University** Paris, France
Internship Feb. 2026–Apr. 2026
- Laboratoire d'informatique de Sorbonne Université (LIP6)
- Worked with Prof. Evripidis Bampis.
 - Conducted research on learning-augmented algorithms.
- National Tsing Hua University** Hsinchu, Taiwan
Short-term Exchange Program (Master Course) Feb. 2025–Mar. 2025
- Department of Industrial Engineering and Engineering Management
- Worked with Prof. Wing-Kai Hon.
 - Conducted research on efficient algorithm design.

TECHNICAL SKILLS

- Deal with:
 - Deep learning, reinforcement learning, front-end development, back-end development, etc.
- Languages and Frameworks:
 - Advanced:
Rust, Python, PyTorch, TensorFlow, TypeScript, JavaScript, React, Next.js, HTML/CSS, C, C++, bash, Swift, Go, Google Apps Script, and R
 - Intermediate:
Haskell, OCaml, Scheme, Assembly (RISC-V), SQL, Fortran, Verilog, C# (Unity), Julia, Java, and Kotlin
- Tools:
 - Git/GitHub, Docker, AWS, GCP, Linux, GitHub Actions, GraphQL, Terraform, Arduino, Raspberry Pi, etc.

CERTIFICATIONS

- Deep Learning for ENGINEER Certified by JDLA (Japan Deep Learning Association) (2023)
- The SUKEN Test in Mathematics Proficiency Grade 1 (2022)