Shuhei Watanabe

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Education

Oct 2020 – Oct 2023	**University of Freiburg**, Freiburg, Germany. MSc in Computer Science. Supervisor: Prof. Frank Hutter. Overall GPA: 1.1/5.0 (1.0 is the best grade).
Apr 2014 – Mar 2020	**The University of Tokyo**, Tokyo, Japan. BSc in Systems Innovation (Sep 2015 ~), Liberal arts (~ Aug 2015). Graduated with **the Best GPA** out of 37 students.

Employment

Jun 2024 – Present	**National Institute of Advanced Industrial Science and Technology (AIST)**, Tokyo, Japan. Visiting Researcher, Social Intelligence Research Team (Part Time).
Oct 2023 – Present	**Preferred Networks Inc.**, Tokyo, Japan. Development of Optuna and support of its internal usage (Full Time).
Dec 2020 – Sep 2023	**Machine Learning Lab**, Freiburg, Germany. Development of Auto-PyTorch, an AutoML tool.
Sep 2018 – Sep 2020	**AIST**, Tokyo, Japan. Technical Staff (Full-Time), Social Intelligence Research Team.

Awards / Honors

Sep 2023	**AutoML 2023 Travel Awards** (500 EURO).
Aug 2023	**IJCAI-AIJ 2023 Travel and Accessibility Grant Program** (1,000 USD).
Oct 2022	**NeurIPS 2022 Complimentary Registration** (350 USD).
Oct 2022	**ELIZA MSc Scholarship** (12,000 EUR, 4 students selected from the University).
Oct 2022	**Deutschlandstipendium** (3,600 EUR).
Jul 2022	**1st Prize in AutoML2022: Multiobjective Hyperparameter Optimization for Transformers**
Sep 2020	**ITO Foundation for International Education Exchange** (48,000 USD, AR: 6.7%).
Mar 2020	**Hatakeyama Award from the Japan Society of Mechanical Engineers**. Awarded for the distinctive grades at the University of Tokyo (AR: 5/340=1.5%).
May 2019	**PRMU 2018 Yearly Research Encouragement Award**. For "*Speed Up of Hyper-Parameter Tuning with Nelder-Mead Method by Parallel Computing*" (AR: 3/170=1.8%). Omitted in "Selected Publications"

Selected Publications

See **my website** for the full publication list. The acceptance rate of IJCAI'23 was about 14%.

1. **S. Watanabe**, F. Hutter (2023). c-TPE: Tree-Structured Parzen Estimator with Inequality Constraints for Expensive Hyperparameter Optimization. International Joint Conference on Artificial Intelligence (IJCAI).

2. **S. Watanabe**, N. Awad, M. Onishi, F. Hutter (2023). Speeding Up Multi-Objective Hyperparameter Optimization by Task Similarity-Based Meta-Learning for the Tree-Structured Parzen Estimator. International Joint Conference on Artificial Intelligence (IJCAI).

3. **S. Watanabe**, A. Bansal, F. Hutter (2023). PED-ANOVA: Efficiently Quantifying Hyperparameter Importance in Arbitrary Subspaces. International Joint Conference on Artificial Intelligence (IJCAI).

4. **S. Watanabe** (2023). Tree-Structured Parzen Estimator: Understanding Its Algorithm Components and Their Roles for Better Empirical Performance. arXiv:2304.11127.

Mentoring & Supervision

Jun 2024 – Present	**Chisa Mori**, MSc Student, AIST. Theme: Parallel coordinate plots for multi-objective problems.
Jul 2024 – Present	**Kaito Baba**, MSc Student, Preferred Networks Inc. Theme: Development of constrained optimization for the Gaussian process-based sampler (Single-objective, Multi-objective).
Aug 2025 – Present	**Kaichi Irie**, MSc Student, Preferred Networks Inc. & AIST. Theme: Development of parallel processing in the Gaussian process-based sampler (Article).

Miscellaneous

- **Japanese** (Native Language), **English** (C1, TOEFL iBT: 100), **German** (B2)

- Approx. Top 3.5% (highest) algorithm programmer in **AtCoder** mostly using C++.