Shuhei Watanabe

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Education

Oct 2020 – Oct 2023	**University of Freiburg** - Freiburg, Germany. Master of Computer Science. Supervisor: Prof. Frank Hutter. Overall GPA: 1.1/5.0 (1.0 is the best grade).
Sep 2015 – Mar 2020	**The University of Tokyo** - Tokyo, Japan. Bachelor in Systems Innovation, Faculty of Engineering. Break for working at M3 and AIST from Apr 2018 to Sep 2019. Overall GPA: 3.78/4.0 (4.0 is the best grade). Graduated with **the Best GPA** out of 37 students.
Apr 2014 – Aug 2015	**The University of Tokyo** - Tokyo, Japan. Bachelor of College of Arts and Science, Natural Science 1.

Employment

Jun 2024 – Present	**National Institute of Advanced Industrial Science and Technology (AIST)** - Tokyo, Japan. Visiting Researcher of 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	**National Institute of Advanced Industrial Science and Technology (AIST)** - Tokyo, Japan. Technical Staff (Full-Time) of Social Intelligence Research Team for AutoML Research.
Apr 2018 – Aug 2018	**M3, Inc.** - Tokyo, Japan. Market Researcher and Consultant (Full-Time Internship). Genome Business Consulting.

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. AR, ◯, and ♣ refer to the acceptance rate, the presenter and the equally contributed authors, respectively.

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) (AR: 644/4566≃14%).
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) (AR: 644/4566≃14%).
3. ◯ **S. Watanabe**, A. Bansal, F. Hutter (2023). PED-ANOVA: Efficiently Quantifying Hyperparameter Importance in Arbitrary Subspaces. International Joint Conference on Artificial Intelligence (IJCAI) (AR: 644/4566≃14%).
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.
Theme: Development of constrained optimization for the Gaussian process-based sampler (Single-objective, Multi-objective).

Aug 2025 – Present **Kaichi Irie**, MSc Student, Preferred Networks & AIST.
Theme: Development of parallel processing in the Gaussian process-based sampler (Article).

Miscellaneous

- **Japanese** (Native Language), **English** (C1, TOEFL iBT: 100), **German** (B2)
- **AtCoder**: Highest Rating 1626 (Approx. Top 3.5%). Mostly by C++.