

Shuheï 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).
- Sep 2015 – Mar 2020 **The University of Tokyo** - Tokyo, Japan.
BSc in Systems Innovation, Faculty of Engineering.
Graduated with **the Best GPA** (3.78/4.0) 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.

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++.