

Kei Ishikawa

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Work Experience

Machine Learning Engineer, G-Research, London, UK November 2022 -
Solving all kinds of engineering problems in quantitative research using machine learning, such as efficient large-scale training. Mainly using Pytorch and PyData stack.

Intern (Quant Analyst), G-Research, London, UK June 2021 - September 2021
PoC of a new algorithm for risk modeling of a financial market. Mainly used Pyspark, Pandas, Pytorch, Numpy, and Scipy.

Intern, Preferred Networks Co., Ltd., Tokyo, Japan August 2020 - September 2020
I worked on open-source software for hyperparameter optimization (**Optuna**) in Python. I improved the performance of its core optimization algorithm, as introduced in this blog post: [here](#).

Education

ETH Zurich, Switzerland September 2020 – November 2022
Master of Science in Statistics (Distinction)
GPA: 5.93/6, Overall GPA: 5.58/6 (incl. non-mandatory courses)

University of Tokyo, Japan April 2015 – March 2020
Bachelor of Engineering in Systems Innovation (Dean's Award)
GPA: 3.72/4

ETH Zurich, Switzerland September 2018 – August 2019
Exchange Program, Department of Computer Science
GPA: 5.55/6

Competencies

Languages Japanese (Native), English (IELTS: 7.5), Chinese (Elementary)

Programming Advanced: Python, R
Intermediate: SQL, UNIX
Elementary: Java, C, C++, Matlab

Coursework & Informed Topics Applied Mathematics:
Mathematical Optimization, Discrete Mathematics, Algorithms and Data Structures, Convex Optimization, Numerical Analysis
Statistics:
Mathematical Statistics, Time Series Analysis, Bayesian Statistics, Experimental Design, Causal Inference, Econometrics
Machine Learning:
Deep Learning, Reinforcement Learning, Bayesian/Generative Models, Kernel Methods, Low-rank Decomposition and Spectral Methods
Domain knowledge:
Natural Language Processing, Computer Vision, Graph Machine Learning,

Signal Processing, Microeconomics, Game Theory, Optimal Control
Computer Systems:
Computer Architecture, Operating Systems, Computer Networks,
Relational Databases, Compiler, High-performance Computing

Awards and Funding

Heiwa Nakajima Foundation

Scholarship for the master's study at ETH Zurich. 45K USD.

Dean's Award (Faculty of Engineering, University of Tokyo)

Awarded for academic excellence. About 20/1000 graduating students receive this award.

Tobitate Young Ambassador Program

Scholarship for the exchange study at ETH Zurich. 18K USD.

Other Experiences in Research and Development

Kernel Conditional Moment Constraints for Confounding Robust Inference¹

Published at AISTATS 2023

In my master's thesis, I developed a causally-robust policy evaluation (e.g. treatment effect estimation) method for offline contextual bandits that strictly generalizes the existing methods.

Efficient Debiased Evidence Estimation by Multilevel Monte Carlo Sampling¹

Published at UAI 2021 (Oral presentation)

In my bachelor's thesis, I developed a fast algorithm for debiased Bayesian computation using a technique called the multilevel Monte Carlo method.

Open Source Software (OSS)

I occasionally contribute to OSS, such as scikit-learn (#19732), Scipy (#13654), Optuna (#1762, #2423, and #4591).

¹Contributed to both as the first author.