

RYO MITSUHASHI

+1 609-255-6311 ◊ rm4411@princeton.edu

EDUCATION

Princeton University, Princeton, NJ

Sept 2023 - May 2027

B.A. in Computer Science

Minors in Applied and Computational Mathematics, Humanistic Studies, Statistics and Machine Learning

Cum. GPA: 3.82 / 4.0, **Major GPA:** 3.97 / 4.0

University of Tokyo, Tokyo, Japan

April 2023 - Aug 2023

Completed 15 credits toward the Bachelor of Science in Computer Science

EXPERIENCE AND PROJECTS

Deconstructing In-Context Learning

May 2026 - Present

Princeton University

Research Project under Professor Tom Griffiths

- Analyzing memorization and generalization failures in ICL and improving them by interventions

MLE Agent

Jan 2026 - Present

Princeton University

Research Project under Professor Karthik Narasimhan

- Testing how SFT could improve the metric and agent behavior on MLE Bench

Occlusion Reasoning Benchmark

Feb 2026 - Present

Princeton University

Research Project under Professor Zhuang Liu

- Created a benchmark that tests VLM's ability to recover fully occluded objects using cues in the image
- Accepted to Computer Vision in the Wild in CVPR 2026

Quantifying Compute-Supervision Tradeoff in RLVR

Mar 2026 - May 2026

Princeton University

Research extended from Reinforcement Learning Class

- Studied how rollouts could compensate for the noisy verifiers in GRPO
- Accepted to CTB (Combining Theory and Benchmarks) in ICML2026: [arXiv link](#)

Assessment of Chain of Thought Faithfulness

Jan 2026 - Mar 2026

Hitachi Central Laboratory, Tokyo, Japan

Research Intern

- Conducted control experiments to assess Chain of Thought (CoT) faithfulness via unlearning techniques.
- Accepted to ACL 2026 Student Research Workshop (oral)

Cross-Layer Transcoder Language Features

May 2025 - Jan 2025

Qatar Computing Research Institute, Doha, Qatar

Research Intern

- Characterized output language features in Cross-Layer Transcoders (CLT) using activation-based, frequency-based, and annotation-based methods.
- Quantified method efficacy by developing a novel dataset for antonym prediction and closed set enumeration.
- Under review for EMNLP2026 Findings

Idiosyncrasies of Unified Models

Nov 2025 - Jan 2026

Princeton University

Research extended from Computer Vision Class

- Developed a classifier to attribute image origins across 7 open-source and closed-source models.
- Analyzing how model bias generalizes across distinct domains and languages to identify fingerprints.
- Accepted to ICLR 2026 DATA-FM: [openreview link](#), [ICLR link](#), [arXiv link](#)

Fast Convolution of Toeplitz Kernel

Mar 2025 - Present

Princeton University

Research under Professor Marc Gilles

- Analyzing fast convolution algorithms for Toeplitz kernels in Chebyshev series.
- Optimizing time complexity from a naive $O(n^3)$ to $O(n^2)$ by generalizing results from "An Algorithm for the Convolution of Legendre Series."

Reinforcement Learning (GRPO) in Sudoku

SB Intuitions, Tokyo, Japan

Aug 2025

Engineering Intern

- Applied GRPO to Sudoku and Competitive Coding problems using NeMo-RL, achieving ~90% Sudoku accuracy on Qwen2.5 7B.

Memory Consumption Estimator for Llama 3

Fixstars Corporation, Tokyo, Japan

Dec 2024 - Jan 2025

Software Engineering Intern

- Developed a memory consumption estimator for Llama 3 architectures.
- Automated estimator evaluation using Bash and Python (argparse & subprocess) on a Megatron-LM environment.

Energy Transition Bottleneck Visualization

Andlinger Center for Energy and Environment

May 2024 - Aug 2024

Research Assistant

- Developed a web platform to communicate complex energy transition bottlenecks to a general audience.
- Enhanced an open-source traffic simulator with custom visualization features using JS, CSS, and HTML.

AWARDS

Toshin Study Abroad Scholarship: Awarded \$95,000/year for four years to pursue undergraduate studies.

OURSIP Summer Grant: Awarded \$7,200 to conduct research on campus in summer 2026

Travel Grants: Awarded \$1,250 by the university to attend ICLR 2026; Awarded \$600 by the university and \$750 by the workshop grant to attend ACL 2026.

SKILLS

Languages	Proficient: Python (4+ years), Java, JavaScript Familiar: C/C++, SQL, Golang, OCaml, MATLAB, PHP, R
Technologies	Git/GitHub/GitLab, Linux, MacOS, Windows, Slurm/PBS, Docker/Apptainer
Spoken Languages	English (Fluent), Japanese (Native), Spanish (Beginner), Korean (Beginner)

LEADERSHIP AND ACTIVITIES

Co-President , Japanese Student Association	Sept 2023 - Present
Member , Men's Club Soccer	Sept 2023 - Present
Working Unit Member , Civic Leadership Council	Sept 2023 - Dec 2024
Core Member , Mielka (Non-Profit for Voter Engagement, Japan)	June 2022 - April 2024
Captain , Varsity Soccer Team (High School)	April 2020 - March 2022

COURSEWORK

Computer Science	Reasoning about Computation (TA), Computer Vision, Distributed Systems, Theory of Computation, Reinforcement Learning, NLP
Math	Numerical Analysis, Graph Theory, Complex Analysis

ACADEMIC SERVICES

ICLR2026 Workshop DATA-FM peer reviewer

LINKS

GitHub	https://github.com/rm-3284
LinkedIn	https://www.linkedin.com/in/ryo-mitsuhashi-680a2b271