

Yuki Minai

yminai@andrew.cmu.edu

Education & Research Experience

Carnegie Mellon University, Pittsburgh **September 2021 - Present**
Ph.D. in Machine Learning and Neural Computation Program (Expected graduation date: May 2026)

Byron Yu Lab and Matthew Smith Lab, Neuroscience Institute

- Development of a closed-loop brain stimulation framework to control neural population activity states
 - Integrated latent-variable modeling, deep learning, and reinforcement learning to adaptively update multi-channel brain stimulation parameters in real-time
 - Designed and conducted in vivo experiments with non-human primates to validate the framework
- Development of a cross-subject modeling approach for predicting brain responses to stimulation

New York University, New York **September 2019 - May 2021**
Master of Arts and Science in Psychology

Kiani Lab, Center for Neural Science, Research Scientist

- Assessment of monkey's prospective planning ability using a novel sequential maze task

Nara Women's University, Nara **April 2009 - March 2013**
Bachelor of Science in Mathematics

Publication

- “*MiSO: Optimizing brain stimulation to create neural activity states*”, **Y. Minai**, J. Soldado Magraner, M. A. Smith*, B. M. Yu*, *In Advances in Neural Information Processing Systems (NeurIPS)*, 2024
- “*OMiSO: Adaptive optimization of state-dependent brain stimulation to shape neural population states*”, **Y. Minai**, J. Soldado Magraner, B. M. Yu*, M. A. Smith*, *In Advances in Neural Information Processing Systems (NeurIPS)*, 2025
- “*Robustness of working memory to prefrontal cortex microstimulation*”, J. Soldado Magraner, **Y. Minai**, B. M. Yu*, M. A. Smith*, *Journal of Neuroscience*, 2025

Award & Fellowship

- The Carnegie Prize Student Fellowship (September 2023 - August 2024)
- Japan Student Service Organization Scholarship (August 2021 - July 2026)
- The second best presentation award, The 25th Annual NYU Masters Psychology Research Conference

Professional Experience

Amazon.com, Inc., Seattle **June 2025 - August 2025**

Applied Research Scientist Intern, Book Tech Team

- Extended the capability of a large language model (LLM) pipeline to process multi-lingual text inputs
- Developed and deployed a production-ready LLM model that recommends optimal book category assignments for publishers based on content

ABEJA, Inc., Tokyo **January 2019 - June 2019**

Data Scientist, Insight for Retail Development Team

- Using a causal inference model, developed a new function of Insight for Retail (platform that optimizes store performance using customer behavior data) to identify the factor driving sales growth for each shop

Rakuten, Inc., Tokyo **October 2015 - March 2018**

Assistant Manager, Merchant Strategy Group, Planning Department, E-Commerce Company

- As a project manager of "Merchant NPS improvement project", analyzed in-house big data and survey data from 45,000 merchants to improve the customer's satisfaction by collaborating with more than 50 employees

Kyocera Communication Systems Co. Ltd., Tokyo **April 2013 - July 2015**

Data Scientist, Technical Development Team, Business Development Group, Internet Media Department

- Developed a click rate prediction model for an internet-based advertising system to improve targeting

Skills

Machine learning (deep learning, signal processing, reinforcement learning, latent variable model), Closed-loop optimization, Python, PyTorch, MATLAB, GPU computing, Linux, Neural data analysis