

Ichiro Hashimoto

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Education

University of Toronto

PH.D. IN STATISTICAL SCIENCES (IN PROGRESS)

- Research Area: Learning theory in over-parametrized regime

Toronto, ON

2022 - Current

Ross School of Business, University of Michigan

M.B.A (MASTER OF BUSINESS ADMINISTRATION)

Ann Arbor, MI

2014 - 2016

The University of Tokyo

MASTER OF MATHEMATICAL SCIENCES, BACHELOR OF MATHEMATICS

Tokyo, Japan

2006 - 2008, 2002 - 2006

- Master's Thesis: The method of $\bar{\partial}$ -equation on High Dimensional Complex Geometry (Advisor: Professor Junjiro NOGUCHI)
Conducted thesis research on generalization of approximation theorem of holomorphic functions on $\mathbb{C}^n$ to approximation on pseudo-convex domains by applying Lars V. Hörmander's L^2 - $\bar{\partial}$ method.

Publication

- Directional Convergence, Benign Overfitting of Gradient Descent in leaky ReLU two-layer Neural Networks

[Accepted at ICLR2026] <https://arxiv.org/abs/2505.16204>

In this work, we establish benign overfitting of fixed width leaky ReLU two-layer neural network classifiers in a much wider range of scenarios than was done before by first establishing directional convergence. We provide both, upper and lower classification error bounds, and discover a phase transition in the bound as a function of signal strength. The lower bound leads to a characterization of cases when benign overfitting provably fails even if directional convergence occurs.

- Universality of Benign Overfitting in Binary Linear Classification (with Stanislav Volgushev and Piotr Zwiernik)

[To Appear in Bernoulli] <https://www.arxiv.org/abs/2501.10538>

In this work, we show that benign overfitting of maximum margin classifiers holds in a much wider range of scenarios than was previously known and provide new insights into the underlying mechanisms. We discover a phase transition in test error bounds for the noisy model which was previously unknown and provide some geometric intuition behind it. We further considerably relax the required covariate assumptions in both, the noisy and noiseless case.

Honors & Awards

Doctoral Early Research Excellence Award

DEPARTMENT OF STATISTICAL SCIENCES, UNIVERSITY OF TORONTO

2025

Japanese Government Long-Term Overseas Fellowship

FULL TUITION + \$50,000 ANNUAL STIPEND FOR TWO-YEAR STUDY AT UNIVERSITY OF MICHIGAN

2014-2016

Invited Talks & Poster Presentations

Princeton Machine Learning Theory Summer School

POSTER SESSION

- Directional Convergence, Benign Overfitting of Gradient Descent in leaky ReLU two-layer Neural Networks

Princeton, IL

Aug. 2025

Mathematical Aspects of Learning Theory - 20 years later

POSTER SESSION

- Benign Overfitting of Interpolating Linear Classifier with non-subGaussian mixtures

Barcelona, Spain

Sept. 2024

Princeton Machine Learning Theory Summer School

POSTER SESSION

- Benign Overfitting of Interpolating Linear Classifier with non-subGaussian mixtures

Princeton, IL

Aug. 2024

Teaching Experience

Department of Statistical Sciences, University of Toronto

COURSE INSTRUCTOR

- Operational Math, Doss Summer Prep Bootcamp (July 2025 - July 2025)
- Probability, Doss Summer Prep Bootcamp (July 2025 - July 2025)
- Operational Math, Doss Summer Prep Bootcamp (July 2024 - July 2024)
- Probability, Doss Summer Prep Bootcamp (July 2024 - July 2024)
- Probability, Doss Summer Prep Bootcamp (July 2023 - July 2023)

Toronto, ON

Department of Statistical Sciences, University of Toronto

Toronto, ON

TEACHING ASSISTANT

- STA2111 Graduate Probability I (Sept 2025 - Dec 2025)
- STA347 Probability I (Sept 2025 - Dec 2025)
- Project Mentor, Statistical Sciences Research Program (June 2025 - June 2025)
- STA347 Probability I (Jan 2025 - Apr 2025)
- STA2111 Graduate Probability I (Sept 2024 - Dec 2024)
- STA237 Probability, Statistics and Data Analysis I (Sept 2024 - Dec 2024)
- STA2104 Statistical Methods for Machine Learning II (Jan 2024 - Apr 2024)
- STA347 Probability I (Sept 2023 - Dec 2023)
- STA220 The Practice of Statistics I (Jan 2023 - April 2023)
- STA347 Probability I (Sept 2022 - Dec 2022)

Graduate School of Mathematical Sciences, The University of Tokyo

Tokyo, Japan

TEACHING ASSISTANT

- Linear Algebra I (Apr 2006 - Sept 2006)

Mentorship

UNDERGRADUATE STUDENTS

- Yuta Kondo, University of Toronto (2025 -)

Professional Experience

LeaP Science Foundation

Tokyo, Japan

STAFF

Sept. 2021 - Present

Cabinet Office, Government of Japan

Tokyo, Japan

DEPUTY DIRECTOR OF UNIVERSITY REFORMATION AND FUND

Oct. 2020 - June, 2021

- Launched \$1,000B National University Endowment Fund aimed at boosting research activities of world-class research universities in Japan.

Consulate-General of Japan in San Francisco

San Francisco, CA

CONSUL (SCIENCE & TECHNOLOGY ATTACHÉ)

Oct. 2017 - Sept. 2020

- Created more than 30 strategic reports on science & technology trends to Japanese government, one of which led to development of National Quantum Research Hub on Quantum Machine Learning.
- Led academic collaborations between Silicon Valley and Japan in various areas with emphasis on quantum science.
- Led arrangement of high level meetings between Japanese Science & Technology Minister and Silicon Valley corporate/academic executives, which led to launch of Japan's National Moonshot Program.
- Advised high-level officials of Japanese Ministry of Education on innovative educational method/model developed in Silicon Valley.

Ministry of Education, Culture, Sports, Science and Technology (MEXT)

Tokyo, Japan

DEPUTY DIRECTOR, QUANTUM SCIENCE AND TECHNOLOGY OFFICE

June, 2016 - Sept. 2017

- Directed 10 people team and led development of Japan's first National Quantum Strategy and launched \$200M National Quantum Initiative which drives innovation in quantum information, sensor, laser, and other associated technologies.
- Launched \$300M national construction project of next generation 3 GeV Synchrotron Radiation Research Facility.

Ministry of Education, Culture, Sports, Science and Technology (MEXT)

Tokyo, Japan

MULTIPLE POSITIONS @ OFFICE FOR ADMINISTRATIVE REFORM, ENVIRONMENT AND ENERGY DIVISION, ETC.

April, 2008 - June 2014

- Led National Research lab reformation of introducing National Research and Development Agency framework, which allowed full flexibility to perform cutting-edge R&D activities.
- Launched collaborative project with Ministry of Economy, Trade, and Industry of \$30M annual budget which aims to seamlessly connect basic research and commercialization of emerging energy technologies.

Professional Writing

Evolution of Silicon Valley EdTech

Nikkei xTREND

CONTRIBUTING WRITER

July 2019

- Contributed article about evolution of Silicon Valley EdTech and its implication to the future of Japan's education system to Nikkei xTREND, one of major Japanese media focused on technology trends.

National Strategic Plan: Quantum Science and Technology

Council of Quantum Science

MAIN EDITOR

August 2017

- Created national strategy for promotion of quantum science and technology, identifying Quantum Simulation, Quantum Computing, Quantum Sensing and other associate technologies as areas of strategic focus.

Construction of Next Generation 3 GeV Synchrotron Radiation Research Facility

Council of Quantum Beam Science

MAIN EDITOR

February 2017

- Created national construction plan of state-of-the-art synchrotron radiation research facility of 3-GeV class in collaboration with experts from various fields, such as material sciences, catalyst chemistry, condensed matter physics, and structural biology.

A Strategic Plan for the Center for Discovery of New Medicine

University of Michigan

MBA CONSULTANT

April 2015

- Proposed strategies to Center for Discovery of New Medicine (CDNM), University of Michigan. Based on our recommendation, University of Michigan reorganized CDNM as Michigan Drug Discovery and succeeded in integrating fragmented resources across campus.

Professional Talks

Quantum.Tech Conference

Boston, MA

JAPAN'S NATIONAL QUANTUM INITIATIVE

Sept. 2019

- Presented Japanese Government's National Initiative on Quantum Science and Technologies during international government panel.

Q2B 2019, Practical Quantum Computing

San Jose, CA

JAPAN'S NATIONAL QUANTUM INITIATIVE

Dec. 2019

- Presented Japanese Government's National Initiative on Quantum Science and Technologies during international government panel.
https://www.youtube.com/watch?v=AZs81V_sDMg

Japanese Chamber of Commerce, Northern California

San Francisco, CA

SELECTED TOPICS ON U.S. EDUCATION SYSTEM

Aug. 2019

- Presented various issues in U.S. Education system from viewpoint of race and discrimination.

Japanese Technology Professional Association

Palo Alto, CA

HAVE MOOCs REALLY DISRUPTED HIGHER EDUCATION?

March. 2019

- Presented true impact of MOOCs on higher education and what their recent pivots actually mean.

Extracurricular activities

Ross Alumni Club of Japan

Tokyo, Japan

PROGRAM COORDINATOR & ALUMNI INTERVIEWER

2016 - Present

- Coordinated admission info sessions, conducted multiple admission interviews, and facilitated team exercises in Tokyo, Japan

Skills

Languages English (Professional Proficiency), Japanese (Native)