

Eric Zhao

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SUMMARY

I am a 1st year Computer Science PhD student at UC Berkeley, where I work broadly on the theoretical aspects of machine learning (ML) and economics. My research aims to develop learning algorithms and economic mechanisms that incentivize equity, privacy, and collaboration. I come from a background in startups and full-stack engineering.

EDUCATION

University of California, Berkeley 2021-2026

Ph.D., Computer Science. No GPA.

- Member of the Berkeley AI Research Lab (BAIR) and the Theory Group, working with Profs. Nika Haghtalab & Michael I. Jordan..
- Graduate coursework in theoretical statistics and learning theory + economics.

California Institute of Technology 2016-2020

B.S., Computer Science, 2020. GPA: 3.9/4.0.

- Graduate-level coursework includes statistics, probability, functional analysis, algorithmic economics, matching markets, reinforcement learning, and learning theory.
- Learning theory research mentored by Profs. Yisong Yue & Anima Anandkumar; economics research mentored by Prof. Adam Wierman.
- Periods of physical absence: sabbatical in 2019 to join Google (San Francisco); leave of absence in Winter 2018 to join HVF Labs (San Francisco); partial enrollment in Aug. 2017 - Feb. 2018 to join Brewgorithm (New York) and Whimmly (Texas).

PUBLICATIONS

Eric Zhao, De-An Huang, Hao Liu, Zhiding Yu, Anqi Liu, Olga Russakovsky, Anima Anandkumar “*Scaling Fair Learning to Hundreds of Intersectional Groups*,” submitted & under review, Sep. 2021. [Preprint link](#).

Eric Zhao, Alex Trott, Caiming Xiong, Stephan Zheng. “*ERMAS: Learning Policies Robust to Reality Gaps in Multi-Agent Simulations*,” preprint, June. 2021. [Arxiv link](#).

Eric Zhao, Anqi Liu, Animashree Anandkumar, Yisong Yue. “*Active Learning under Label Shift*,” appeared at the 2021 International Conference on Artificial Intelligence and Statistics (AISTATS), April 2021. Also presented at the Workshop on Real World Experiment Design and Active Learning at ICML 2020. [Arxiv link](#), [open-source link](#).

Eric Zhao, Erich Liang, Adam Wierman, Laura Doval, Federico Echenique. “*Incentivizing Participation in School Choice Programs*,” presented (poster) at 2019 Carver Mead Symposium. Best Poster Presentation at 2019 Caltech Meeting of the Minds.

EXPERIENCE

Salesforce Research: Visiting Researcher

Sept 2021 - Present

- Investigating learning-theoretic models of boundedly rational agents.

Nvidia Research: Part-Time Research Intern

Feb. 2021 - Aug. 2021

- Mentored by Prof. Anima Anandkumar and De-An Huang.
- Researched how deep learning models bias against intersectional groups, and authored a paper on how to mitigate such bias when training models on ImageNet.
- Led project and university collaborations, ran large-scale CV experiments (PyTorch).

Salesforce Research: Research Intern June 2020 - Oct. 2020

- Mentored by Stephan Zheng on the AI Economist team.
- Authored paper on a new model of bounded rationality and a multi-agent reinforcement learning algorithm that is robust against such boundedly rational behavior.
- Ran large-scale deep reinforcement learning experiments (RLlib).

Caltech CMS: Student Researcher Sept. 2019 - June 2020

- Researched theoretical and empirical effects of distribution shift on active learning.
- Researched learning-to-search algorithms and imitation learning methods.

Uber ATG: Software Engineering Intern (Autonomous Vehicles) June - Sept. 2019

- Developed safety-critical computer vision algorithms for self-driving cars.
- Extended our blockage localization range by up to 20% and oversaw live track tests.

Google Inc.: Software Engineering Intern (Cloud AI, Dialogflow) April - June 2019

- Developed error-handling capabilities for autonomous dialogue agents (Tensorflow).
- Improved error detection by >10% with a novel reinforcement learning framework.

Caltech RSRG Lab: Student Researcher Dec 2018 - Oct. 2019

- Researched the game-theoretic effects of external options on matching markets.
- Ran case-study on a California school choice lottery, boosting matching by 10%.

STARTUPS

HVF Labs: Visitor Nov. - Dec. 2018

- Developed an experimental credit card program that incentivizes patronage of local stores; a pilot project with Max Levchin in his startups lab.

Whimmlly Inc.: Cofounder Oct. 2017 - Mar. 2018

- Built “personal shopper” bots for eCommerce stores to add on their websites.
- Joined the MassChallenge accelerator in Texas where we built a prototype, assembled a team, and secured Fortune 500 clients for a beta test. Shut down after I left.

Brewgorithm: Cofounder June - Oct. 2017

- Built recommendation engines for beverage/alcohol products.
- Joined a ZX-Ventures accelerator, raising a round from AB InBev SA/NV (~\$100-750k). Eventually merged to become an AB InBev Company after I left.

TEACHING

Volunteer Teacher with Microsoft Philanthropy’s TEALS Program (2020-2021)

Teaching Assistant for Caltech’s graduate-level courses: CS/EE 144, algorithmic economics taught by Prof. Adam Wierman, and CS/EE 155, a general machine learning course taught by Prof. Yisong Yue (2019-2020).

Volunteer Tutor with Youth Competitive Programming Circle (2013-2016)

SERVICE

Conference Reviewer for AISTats 2021, ICML 2021, Neurips 2022, ICLR 2022

Mentor in the BAIR Undergraduate Mentorship Program (2021-Present)

Council Member on the Caltech CMS Partners Advisory Council (2018-2019)