

EDUCATION

Yale University

Ph.D. in Computer Science

New Haven, CT

Aug 2021–Current

- Research areas: statistical learning theory, machine learning theory

University of Pennsylvania

M.S.E. in Computer Science, GPA: 4.00/4.00

Philadelphia, PA

May 2019

- Submatriculant: Completed Bachelor's and Master's degrees concurrently
- Thesis: "Noisy Labels in Multiclass Classification", advised by Dr. Shivani Agarwal

University of Pennsylvania

B.A. in Mathematics and in Computer Science, minor in Statistics, GPA: 3.84/4.00

Philadelphia, PA

May 2019

- Summa Cum Laude

SELECTED SCHOLARSHIPS AND AWARDS

- **Quad Fellowship by Schmidt Futures, Finalist** 2022
Finalist (<5% of applicants from U.S.A., India, Australia, and Japan) for the Quad Fellowship 2022-2023 cycle.
- **Graduate Fellowship for STEM Diversity** 2022
Formerly the National Physical Science Consortium Fellowship (NPSC), the GFSD is a national fellowship which provides 6 years of support and \$20,000 stipend. Supported by the National Security Agency (NSA).
- **Ford Foundation Predoctoral Fellowship Competition, Honorable Mention** 2022
Accorded honorable mention status in the 2022 Ford Foundation Fellowship Programs competition administered by the National Academies of Sciences, Engineering, and Medicine.
- **Department of Defense SMART Scholarship, Declined** 2020
Offered up to 5 years of support in addition to a \$38,000 living stipend. Awarded to the top 20% of Ph.D. applicants.
- **PennApps XIX Third Grand Prize, Best AI/ML Hack** 2019
I conceptualized and wrote the ML models for an automated recruiting tool that incorporates fair machine learning techniques from recent research. Won third grand prize at PennApps XIX, as well as the overall best AI/ML prize.
- **Twitter GHC Fellow** 2018
A merit-based fellowship awarded to attend the 2018 Grace Hopper Celebration and a full-time offer of employment at Twitter.

PUBLICATIONS

- [1] **J. Lee**, S. Haghighatshoar, and A. Karbasi, "Exact gradient computation for spiking neural networks through forward propagation", in *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2023.
- [2] M. Zhang, **J. Lee**, and S. Agarwal, "Learning from noisy labels with no change to the training process", in *International Conference on Machine Learning (ICML)*, Jul. 2021.
- [3] K. Jaidka, S. C. Guntuku, **J. H. Lee**, Z. Luo, A. Buffone, and L. H. Ungar, "The rural–urban stress divide: Obtaining geographical insights through twitter", *Computers in Human Behavior*, vol. 114, p. 106 544, Jan. 2021, ISSN: 0747-5632.

- [4] S. Chen, E. Dobriban, and **J. H. Lee**, “A group-theoretic framework for data augmentation”, *Journal of Machine Learning Research (JMLR)*, vol. 21, no. 245, pp. 1–71, 2020.
- [5] S. Chen, E. Dobriban, and **J. Lee**, “A group-theoretic framework for data augmentation”, in *Advances in Neural Information Processing Systems (NeurIPS)*, **Oral Presentation**, 2020.

TECHNICAL REPORTS

- [6] S. Mayhew, T. Tsygankova, F. Marini, Z. Wang, **J. Lee**, X. Yu, X. Fu, W. Shi, Z. Zhao, W. Yin, K. K. Hay, M. Shur, J. Sheffield, and D. Roth, “University of Pennsylvania LoReHLT 2019 Submission”, Tech. Rep., 2019.

PRESENTATIONS AND INVITED TALKS

- NeurIPS 2022 — Optimization for Machine Learning Workshop (Dec 3, 2022)
- UCSD — Rose Yu’s research group weekly meeting (May 16, 2022)
- TILOS — Student and Postdoc Workshop (March 28, 2022)
- Penn — Workshop for Equivariance and Data Augmentation (September 4, 2020)

PROFESSIONAL EXPERIENCE

Twitter

San Francisco, CA

Machine Learning Engineer II, Ads Targeting and Modeling

Jul 2019-Aug 2021

- Built ML models and pipelines to help advertisers find their audience on Twitter.
- Worked fully end-to-end on ML pipelines: from data processing, data pipeline, model architecture and design, training, and serving, on a variety of targeting products including demographic targeting, mobile app recommendation systems, and early filtering models.

Goldman Sachs

New York, NY

Investment Management Summer Analyst (Private Wealth Management Strats)

Summer 2018

- Collaborated with portfolio managers/traders to analyze portfolios, create investment algorithms, and build pricing and other models.
- Built a web tool for managing PWM (Private Wealth Management) clients’ preferred stock portfolios. Designed machine learning models to predict proportion of private wealth clients likely to need margin/bank loans to grow the business.

Morgan Stanley

New York, NY

Quantitative Finance Summer Analyst (Securitized Products Group Strats)

Summer 2017

- Worked with traders and data to advise new trading strategies in securitized products.
- Found discrepancies in real loan data to find trading opportunity in RMBS (residential mortgage-backed securities) and used machine learning models to predict loan term modification rate of Freddie Mac loans to find opportunity in CRT (credit risk transfer) products.

TEACHING

- **Teaching Fellow** at Yale University Spring 2023
Probabilistic Machine Learning (CPSC 586)
- **Teaching Fellow** at Yale University Fall 2022
Introduction to Database Systems (CPSC 537)

- **Teaching Assistant** at University of Pennsylvania Spring 2018, Spring 2019
Machine Learning (CIS 520)
- **Teaching Assistant** at University of Pennsylvania Spring 2019
Algorithms (CIS 320)
- **Teaching Assistant** at University of Pennsylvania Fall 2018
Agent-Based Modeling and Simulation (ESE 520)
- **Teaching Assistant** at University of Pennsylvania Spring 2018
Internet and Web Systems (CIS 555)
- **Head Teaching Assistant** at University of Pennsylvania Fall 2017
Software Engineering (CIS 573)
- **Teaching Assistant** at University of Pennsylvania Spring 2017
Software Engineering (CIS 350)
- **Head Teaching Assistant** at University of Pennsylvania Fall 2016, Spring 2017, Fall 2017
Data Structures and Algorithms (CIS 121)

SKILLS

- **Technical Skills:** Proficient: Python (Tensorflow, PyTorch), Java; Basic: Scala, MATLAB, SQL, C/C++
- **Language Skills:** Native: English; Conversational: Korean

SERVICE

- **Graduate Student Assembly (GSA)** 2022–Current
I have been elected to serve on the Graduate Student Assembly (GSA) as a representative of the Computer Science department for the 2022-2023 school year.
 - **Service Committee Chair**, 2022-2023
 - I am the chair of the Service Committee for the 2022-2023 school year, focused on improving service to graduate students and New Haven residents at large.
- **Departmental Graduate Student Advisory Committee (GSAC)** 2022–Current
I serve as one of the first members of the newly formed Yale Computer Science Department's Graduate Student Advisory Committee for the 2022-2023 school year.

VOLUNTEERING AND OUTREACH

- Volunteer Teaching Assistant at **Microsoft TEALS Program** 2021–Current
Volunteer 2-3 days a week to assist AP Computer Science A class at local high school. The TEALS program provides high school students with equitable access to computer science (CS) education and create a pathway to economic opportunity.
- Graduate Student Mentor at **Women in Science at Yale (WISAY)** 2021–Current
Volunteer to mentor an undergraduate student who identifies as a woman in science. I have committed to make time for advice, support, and meeting regularly throughout the school year.
- Graduate Student Mentor at **STEM Mentors at Yale** 2021–Current
Volunteer through annual events (2-part college essay writing workshops and career panel) to motivate and support local students grades 6-12 in STEM, especially underrepresented groups like women and minorities.
- Volunteer Tutor at **The SMART Program** 2019–2021
Volunteer weekly to help tutor a high school student in mathematics, ranging from Algebra II + Trigonometry to Precalculus. The SMART program supports low-income middle and high school students in the San Francisco area to break the cycle of poverty.

- Alumna Mentor at **WiCS Alumni Mentorship Program (Penn)** Spring 2020
Volunteered to be an alumni mentor for WiCS (Women in Computer Science) pilot program that aims to connect undergraduate upperclassmen with UPenn Alumni members who also studied CIS/Engineering. Made time for questions, advice, chatting for undergraduate students.
- Member at **Smart Woman Securities** 2015–2019
Smart Woman Securities aims to teach undergraduate women about finance and investments, empowering women through financial literacy and independence.