Mayee Chen

Curriculum Vitae

Education

09/19 – **Stanford University**, *PhD in Computer Science*
- Advisor: Christopher Ré

09/15 – 06/19 **Princeton University**, *B.S.E in Operations Research and Financial Engineering (ORFE), certificate in Applications of Computing*, GPA: 3.962/4
- Graduated Summa Cum Laude
- Senior Thesis: *A Quantum Version of the Multiplicative Weights Algorithm* (recipient of the Ahmet S. Çakmak Thesis Prize)
- Thesis advisor: Elad Hazan

Research Interests

I am interested in understanding theoretical questions in modern machine learning and using them to develop new methods. I currently am working on how to evaluate sources of supervision, such as in weakly and semi-supervised learning, and how to address model misspecification in these settings. I also enjoy reading about information theory, online optimization, and probability theory.

Publications

- **Comparing the Value of Labeled and Unlabeled Data in Method-of-Moments Latent Variable Estimation**
  Mayee F. Chen*, Benjamin Cohen-Wang*, Steve Mussmann, Frederic Sala, and Christopher Ré.
  Submitted, 2020.
- **Efficient Exploration in Linear MDPs with Nonlinear Confounding Rewards**
  Mayee F. Chen, Yao Liu, Evan Z. Liu, and Emma Brunskill.
  Submitted, 2020.
- **Network Disruption: Maximizing Disagreement and Polarization in Social Networks**
  Mayee F. Chen and Miklos Z. Racz.
  Submitted, 2020.
- **Train and You'll Miss It: Interactive Model Iteration with Weak Supervision and Pre-Trained Embeddings**
  Mayee F. Chen*, Daniel Y. Fu*, Frederic Sala, Sen Wu, Ravi Teja Mullapudi, Fait Poms, Kayvon Fatahalian, and Christopher Ré.
  arXiv preprint arXiv:2006.15168, 2020.
- **Fast and Three-rious: Speeding Up Weak Supervision with Triplet Methods**
  Mayee F. Chen*, Daniel Y. Fu*, Frederic Sala, Sarah M. Hooper, Kayvon Fatahalian, and Christopher Ré.
  International Conference on Machine Learning (ICML), 2020.
- **Effect of Rotational Grazing on Plant and Animal Production**
  Mayee F. Chen and Junping Shi.
  Journal of Mathematical Biosciences and Engineering, vol. 15, no. 2. 2018.
- **Efficient GCD Computation for Big Integers on Xeon Phi Coprocessor**
  Jie Chen, William Watson, and Mayee F. Chen.
  IEEE Conference on Networking, Architecture, and Storage (NAS). 2014.

Awards and Honors

2019 Ahmet S. Çakmak Prize, *Princeton University*, awarded for innovative research and an exceptional senior thesis.

2018 Phi Beta Kappa, *Princeton University*, one of 28 early inductees.

2017 Tau Beta Pi Engineering Honor Society, *Princeton University*

2017 Shapiro Prize for Academic Excellence, *Princeton University*, awarded to 2-3% of the class for exceptional academic record.

2018 Google Games NYC 2nd Place

2017 Princeton Pitch Competition 3rd Place, *Princeton University*, entrepreneurship award

2017 Jane Street INSIGHT Program (winternship) - Quantitative Trading

Work Experience

2016 – 19 **Grader for Computer Science Department**, *Princeton University*

- Algorithms and Data Structures (lead grader), Functional Programming, Reasoning about Computation, Introduction to Machine Learning, and Economics and Computing

06/18–08/18 **Quantitative Trading Intern**, *IMC Trading*, Chicago, IL, Fixed Income, Currencies, and Commodities Desk

- Developed strategies for trading treasury futures and options around news events
- Tested electronic mock trading frameworks and participated in options theory lessons
- Used Python pandas library to analyze pricing and trade data

05/17–08/17 **Software Engineering Intern**, *Google*, Mountain View, CA, Advertiser Platform Team

Worked on AdWords Next Overviews, frontpage data analytics for ads campaigns

- Developed a heuristic greedy RPC scheme for obtaining geographic breakdown data, reducing the CPU of AdWords Next Overviews by approximately 40% (in production)
- Developed a geographical hierarchy algorithm to cull extraneous RPCs; 10% CPU reduction (in production)
- Designed and added efficient zoom functionality for the geographical data
- Worked with asynchronous Java backend frameworks and Angular Dart frontend

05/16–08/16 **Engineering Practicum Intern**, *Google*, Mountain View, CA, Cloud/Cluster/Kernel team

Worked on an infrastructure tool for pushing configuration and data updates to services within Google

- Improved previously static UI's functionality to dynamically update tables displaying data pushes
- Added UI support for push operation RPC calls, including user authentication and push verification
- Redesigned and rewrote testing framework to include test server backend
- Wrote HTTP handlers in Go for backend development and HTML and JavaScript Closure frontend

Talks

2020 ICML Poster Session: speeding up weak supervision

2020 Google x Stanford Summit: labeled vs unlabeled data in latent variable graphical models

Coursework

Relevant graduate courses:

- Convex Optimization II, Randomized Algorithms

Relevant undergraduate courses:

- *ORFE Courses:* Probability Theory (graduate-level course), Optimization, High Frequency Trading, Decision Modeling for Business Analytics, Monte Carlo Simulation, Strategy and Information, Financial Mathematics, Analysis of Big Data, Probability and Stochastics, Microeconomic Theory, Statistics
- *Computer Science Courses:* Optimization for Machine Learning (graduate-level seminar), Computer Networks, Operating Systems, Economics and Computing, Introduction to Machine Learning, Information Security, Human-Computer Interfaces, Neural Networks, Functional Programming, Reasoning About Computation, Programming Systems, Algorithms and Data Structures

Leadership and Activities

At Stanford University:

- Volunteering in the CS department: mentor undergraduates in Stanford CS Mentoring Program, review graduate school applications in Student Applicant Support Program (2020)
- XTRM Kpop Cover Group: dance captain (2019–)
- Alliance Dance Team (2019–)

At Princeton University:

- Triple 8 Dance Company: choreographer, publicity chair (2015–19)
- Kokopops Dance Group: dance captain (2017–19)
- Freshmen Advisee Interactor for School of Engineering (2017–19)

Skills

Advanced: Python, C, Java Intermediate: Go, OCaml, R, Dart Basic: Matlab, Julia