

### Education

- 09/19 – **Stanford University**, *PhD Candidate in Computer Science*
  - Advisor: Christopher Ré
- 09/15 – **Princeton University**, *B.S.E in Operations Research and Financial Engineering (ORFE)*,  
06/19 *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'm interested in using theoretical tools to understand and improve on modern machine learning techniques. My current research is in understanding representation geometry and modeling data. In particular, I have been studying how to induce better representations in contrastive learning, and how to better model noisy training data and unstructured signals through Weak Supervision and probabilistic graphical models.

### Publications and Preprints

- **Ask Me Anything: A simple strategy for prompting language models.**  
Simran Arora, Avaniika Narayan, Mayee Chen, Laurel Orr, Neel Guha, Kush Bhatia, Ines Chami, Christopher Ré.  
*In submission*, 2022.
- **Reducing Reliance on Spurious Features in Medical Image Classification with Spatial Specificity.**  
Khaled Saab, Sarah M. Hooper, Mayee F. Chen, Michael Zhang, Daniel Rubin, Christopher Ré.  
*Machine Learning for Healthcare (MLHC)*, 2022.
- **Shoring Up the Foundations: Fusing Model Embeddings and Weak Supervision**  
Mayee F. Chen\*, Daniel Y. Fu\*, Dyah Adila, Michael Zhang, Frederic Sala, Christopher Ré.  
*Uncertainty in Artificial Intelligence (UAI)*, 2022. **Best Student Paper Runner-Up Award, Oral Presentation.**
- **Perfectly Balanced: Improving Transfer and Robustness of Supervised Contrastive Learning**  
Mayee F. Chen\*, Daniel Y. Fu\*, Avaniika Narayan, Michael Zhang, Zhao Song, Kayvon Fatahalian, Christopher Ré.  
*International Conference on Machine Learning (ICML)*, 2022.
- **TABi: Type-Aware Bi-Encoders for Open-Domain Entity Retrieval**  
Megan Leszczynski, Daniel Y. Fu, Mayee F. Chen, Christopher Ré.  
*Findings of ACL*, 2022.
- **The Details Matter: Preventing Class Collapse in Supervised Contrastive Learning**  
Mayee F. Chen\*, Daniel Y. Fu\*, Michael Zhang, Kayvon Fatahalian, Christopher Ré.  
*AAAI Workshop on Artificial Intelligence with Biased or Scarce Data*, 2022. **Best Paper Award.**
- **An Adversarial Model of Network Disruption: Maximizing Disagreement and Polarization in Social Networks.**  
Mayee F. Chen and Miklos Z. Racz.  
*IEEE Transactions on Network Science and Engineering (TNSE)*, 2021.
- **Mandoline: Model Evaluation under Distribution Shift**  
Mayee F. Chen\*, Karan Goel\*, Nimit Sohoni\*, Fait Poms, Kayvon Fatahalian, and Christopher Ré.  
*International Conference on Machine Learning (ICML)*, 2021.
- **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.  
*AISTATS*, 2021.
- **Fast and Three-rarious: Speeding Up Weak Supervision with Triplet Methods**  
Daniel Y. Fu\*, Mayee F. Chen\*, Frederic Sala, Sarah M. Hooper, Kayvon Fatahalian, and Christopher Ré.  
*International Conference on Machine Learning (ICML)*, 2020.

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## Awards and Honors

- 2021 NSF GRFP Honorable Mention
- 2019 Ahmet S. Çakmak Prize, *Princeton University*, for innovative senior thesis research.
- 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 top 2-3% of the class.

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## 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
- 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
- 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

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## Talks

- 2022 Machine Learning for Fundamental Physics at Lawrence Berkeley National Laboratory: Anomaly Detection with Multiple Reference Datasets
- 2022 Snorkel AI Machine Learning Whiteboard Talk: Liger: Fusing weak supervision with foundation model embeddings
- 2021 MedAI Talk Series: Correcting distribution shift in the ML model evaluation process
- 2021 DAWN Research Workshop: Mandoline: Model Evaluation under Distribution Shift
- 2020 Google x Stanford Summit: Labeled vs Unlabeled Data in Latent Variable Graphical Models

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## Coursework

Relevant graduate courses:

- Information Theoretic Lower Bounds in Data Science, Principles of Data-Intensive Systems, 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

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## Leadership and Activities

Reviewer for NeurIPS and ICML (2021, 2022), AISTATS (2022). Subreviewer for UAI and KDD (2020).

At Stanford University:

- WiML PhD Application Mentorship Program
- CS PhD Admissions Committee (2020, 2021)
- CS Student Applicant Support Program Volunteer (2020, 2021)
- Graduate WiCS Mentor (2021)
- XTRM Kpop Cover Group: dance captain (2019–2021), Alliance Dance Team (2019–2020)

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## Skills

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