

Education

- 9/16–Present **PhD in Computer Science**, *Stanford University*.
5th year PhD student, expected graduation date: 06/2022.
Advisor: Christopher Ré, Stefano Ermon.
- 1/18–1/19 **MS in Statistics**, *Stanford University*.
- 9/14–6/16 **MS in Computer Science**, *Stanford University*, GPA 4.16/4.00.
- 9/12–6/16 **BS in Mathematics**, *Stanford University*, GPA 4.07/4.00.

Research Interests

Machine learning, with a focus on compact models for efficient training and inference:

- Sequence models with long-range memory.
- Structured matrices for compact deep learning models.
- Kernel approximation.
- Data augmentation.

Industry Experience

- 6/20 – 9/20 **Microsoft Research**, Research Intern, Cambridge, MA.
○ Developed a novel loss function for knowledge distillation that improves the performance of the student model.
- 6/16 – 9/16 **Citadel Securities**, Quantitative Researcher, Chicago, IL.
○ Developed a novel feature generation method to analyze large quantitative trading datasets.
○ Built a black-box optimization system for state-of-the-art quantitative trading strategies.
- 6/14 – 9/14 **Google**, Software Engineering Intern, Mountain View, CA.
○ Designed machine learning algorithms to find best advertisements for each Ad Group.

Publications

Albert Gu, **Tri Dao**, Stefano Ermon, Atri Rudra, and Christopher Ré. Hippo: Recurrent memory with optimal polynomial projections. *arXiv preprint arXiv:2008.07669*, 2020.

Tri Dao, Nimit Sohoni, Albert Gu, Matthew Eichhorn, Amit Blonder, Megan Leszczynski, Atri Rudra, and Christopher Ré. Kaleidoscope: An efficient, learnable representation for all structured linear maps. In *The International Conference on Learning Representations (ICLR)*. 2020.

Avner May, Jian Zhang, **Tri Dao**, and Christopher Ré. On the downstream performance of compressed word embeddings. In *Advances in Neural Information Processing Systems (NeurIPS)* 32, 2019.

Jonathan Kuck, **Tri Dao**, Hamid Rezaatofighi, Ashish Sabharwal, and Stefano Ermon. Approximating the permanent by sampling from adaptive partitions. In *Advances in Neural Information Processing Systems (NeurIPS)* 32, 2019.

Jonathan Kuck, **Tri Dao**, Shengjia Zhao, Burak Bartan, Ashish Sabharwal, and Stefano Ermon. Adaptive hashing for model counting. In *Proceedings of the 35th Conference on Uncertainty in Artificial Intelligence (UAI)*. 2019.

Tri Dao, Albert Gu, Matthew Eichhorn, Atri Rudra, and Christopher Ré. Learning fast algorithms for linear transforms using butterfly factorizations. In *The International Conference on Machine Learning (ICML) 36*. 2019.

Tri Dao, Albert Gu, Alexander J Ratner, Virginia Smith, Christopher De Sa, and Christopher Ré. A kernel theory of modern data augmentation. In *The International Conference on Machine Learning (ICML) 36*. 2019.

Jian Zhang, Avner May, **Tri Dao**, and Christopher Ré. Low-precision random Fourier features for memory-constrained kernel approximation. In *The International Conference on Artificial Intelligence and Statistics (AISTATS) 22*. 2019.

Anna T Thomas, Albert Gu, **Tri Dao**, Atri Rudra, and Christopher Ré. Learning compressed transforms with low displacement rank. In *Advances in Neural Information Processing Systems (NeurIPS) 31*. 2018.

Tri Dao, Christopher M De Sa, and Christopher Ré. Gaussian quadrature for kernel features. In *Advances in Neural Information Processing Systems (NeurIPS) 30*. 2017.

Talks

- 06/19 Learning Fast Algorithms for Linear Transforms Using Butterfly Factorizations, ICML (**full oral presentation**), Long Beach.
- 06/19 A Kernel Theory of Modern Data Augmentation, ICML, Long Beach.
- 07/18 A Kernel Theory of Modern Data Augmentation, ICML Towards learning with limited labels workshop, Stockholm, Sweden.
- 12/17 Gaussian Quadrature for Kernel Features (**spotlight**), NeurIPS, Long Beach.

Teaching

- 1/20 – 3/20 CS 228: Probabilistic Graphical Models, Teaching Assistant, Stanford University.
- 4/19 – 6/19 CS 229: Machine Learning, Teaching Assistant, Stanford University.
- 1/16 – 3/16 EE 364A: Convex Optimization I, Teaching Assistant, Stanford University.
- 9/15 – 12/15 EE 103: Intro to Matrix Methods, Teaching Assistant, Stanford University.

Awards

- 2016 Sterling Award for top 25 graduating seniors in School of Humanities and Sciences, Stanford University.
- 2015 Tau Beta Pi, Stanford University.

Service

Reviewer: NeurIPS 2020, ICML 2020, NeurIPS 2019 (**best reviewers**), ICML 2019 (**best reviewers**)