Matthew J. Staib

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Education

Massachusetts Institute of Technology 9/2015 – 5/2020
Ph.D. in Electrical Engineering and Computer Science. GPA: 5.00/5.00
Advised by Professor Stefanie Jegelka
Minor in Philosophy at Harvard – Epistemology, Axiomatic Reasoning

Stanford University 9/2011 – 06/2015
M.S. in Electrical Engineering. GPA: 3.98/4.00
B.S. in Mathematics. GPA: 3.98/4.00
Advanced Proficiency Notation in Mandarin Chinese
Stanford overseas study in Beijing, China (spring 2014)

Research Experience

Two Sigma – Quantitative Researcher, New York, NY 5/2020 - present
On the Machine Learning team.

MIT Machine Learning Group – Research Assistant, Cambridge, MA 9/2015 – 5/2020
Develop efficient algorithms with theoretical guarantees for optimization problems arising in machine learning. Focus on non-convex and combinatorial problems that support robust machine learning and decision making.

Two Sigma – Quantitative Research Intern, New York, NY 5/2019 - 8/2019
Deep learning for finance, on the Machine Learning team.

Google Research – Research Intern, New York, NY 5/2018 – 8/2018
Work toward understanding and improving adaptive methods (e.g. Adam, RMSProp) in non-convex stochastic optimization for machine learning. Mentored by Sashank Reddi, Satyen Kale, and Sanjiv Kumar.

Microsoft Research Asia – Research Intern, Beijing, China 6/2014 – 9/2014
Research compressed sensing tools for sensor and survey data. Mentored by Thomas Moscibroda, Nic Lane.

Selected Papers

Conference Papers

[1] Matthew Staib and Stefanie Jegelka. **Distributionally Robust Optimization and Generalization in Kernel Methods**. In: *Neural Information Processing Systems (NeurIPS)*. 2019.

[2] Matthew Staib, Sashank J. Reddi, Satyen Kale, Sanjiv Kumar, and Suvrit Sra. **Escaping Saddle Points with Adaptive Gradient Methods**. In: *International Conference on Machine Learning (ICML)*. 2019.

[3] Matthew Staib*, Bryan Wilder*, and Stefanie Jegelka. **Distributionally Robust Submodular Maximization**. In: *Artificial Intelligence and Statistics (AISTATs)*. 2019.

[4] Matthew Staib, Sebastian Claici, Justin Solomon, and Stefanie Jegelka. **Parallel Streaming Wasserstein Barycenters**. In: *Neural Information Processing Systems (NIPS)*. 2017.

[5] Matthew Staib and Stefanie Jegelka. **Robust Budget Allocation via Continuous Submodular Functions**. In: *International Conference on Machine Learning (ICML)*. 2017.

Workshop Papers

[1] Matthew Staib and Stefanie Jegelka. **Distributionally Robust Deep Learning as a Generalization of Adversarial Training**. In: *NIPS Machine Learning and Security Workshop*. 2017.

[2] Matthew Staib and Stefanie Jegelka. **Wasserstein k-means++ for Cloud Regime Histogram Clustering**. In: *Proceedings of the Seventh International Workshop on Climate Informatics: CI 2017*. 2017.

Other Industry Experience

Applied Predictive Technologies – Software Engineering Intern, Arlington, VA 6/2015 – 8/2015
Full-stack tool to break out business data by time of day, used in client pilot program for major restaurant chain within days of release. Improved memory footprint and speed in analytics code. Received fulltime offer.

ShoreTel – Software Engineering Intern, Sunnyvale, CA 6/2012 – 9/2012
Created load-testing tools (to automatically create and respond to calls, chats, and emails). Built mock-up of a service to integrate with social media events, and wrote a system to gather and organize logfiles.

Selected Honors/Awards

NDSEG Fellowship recipient 2015 – 2018
NSF Graduate Research Fellowship recipient (declined) 2015 – 2018
Tau Beta Pi (national engineering honors society) 2015
William Lowell Putnam Mathematics Competition – Top 500 finisher 2011, 2014