Saachi Jain

saachij@mit.edu
http://people.csail.mit.edu/saachij

Education

Massachusetts Institute of Technology (MIT) — Cambridge, MA
PhD Candidate in EECS, advised by Aleksander Mądry; GPA: 5.0/5.0 — *Sep 2020 – Present*

Stanford University — Stanford, CA
MS in Computer Science, Concentration: AI/Theory; GPA: 3.938/4.0 — *Jan 2018 – Jun. 2019*
BS in Computer Science with Honors and Distinction, Concentration: Systems; GPA: 3.960/4.0 — *Sept. 2014 – Jun. 2018*

Work Experience and Research

Tesla Computer Vision Scientist — Palo Alto, CA
Tesla Autopilot — *Aug 2019 - Sep 2020*
- *Vision Models for Self-Driving*: Designed and trained computer vision models as part of Tesla Autopilot's Full Self-Driving (FSD) team.

Graduate Research Assistant — Stanford, CA
Advised by Matei Zaharia — *Sep 2018 - Jun 2019*
- *I/O Lower Bounds on Computation Graphs*: Developed automated lower bounds on the I/O of arbitrary computations using the spectra of the computation graph's Laplacian.

Undergraduate Research Assistant — Stanford, CA
Research Assistant, advised by Jure Leskovec — *Sep 2016 - Sep 2018*
- *Motif Aware State Assignment (MASA) in Noisy Time Series Data*: Designed an alternating minimization method to robustly assign states in noisy time series data by leveraging knowledge of recurring state patterns (motifs).

Facebook, Research Engineering Intern — New York, NY
Facebook AI Research (FAIR) — *Jun 2018 - Sep 2018*
- *Dialogue models for Text Adventure Games*: Generated crowd-sourcing tasks and trained initial generative models for project to place context-aware dialogue agents in a text adventure game.

Google, Software Engineering Intern — Mountain View, CA
Indexing Performance Team — *Jun 2017 - Sep 2017*
- *Tiered Storage Prototype*: Designed a system for the Tiered Storage of indexing records on top of Spanner based on the priority of documents.

Dropbox, Software Engineering Intern — San Francisco, CA
Web Performance Team — *Jun 2016 - Sep 2016*
- *Tracking JS Module Load Times*: Developed tools for tracking the load and execution times of Javascript modules when required by the Asynchronous Module Definition framework RequireJs.

Publications (* indicates equal contribution)

- **Saachi Jain***, Dimitris Tsipras*, Aleksander Mądry . Combining Diverse Feature Priors. *International Conference on Machine Learning (ICML) 2022.* Paper
- **Saachi Jain***, Hadi Salman*, Eric Wong, Pengchuan Zhang, Vibhav Vineet, Sai Vemprala, Aleksander Mądry. Missingness Bias in Model Debugging. *International Conference on Learning Representations (ICLR) 2022.* Paper
- Hadi Salman*, **Saachi Jain***, Eric Wong*, Aleksander Mądry. Certified Patch Robustness via Smoothed Vision Transformers. *Conference on Computer Vision and Pattern Recognition (CVPR) 2022.* Paper
- **Saachi Jain** and Matei Zaharia. Spectral Lower Bounds on the I/O Complexity of Computation Graphs. *Symposium on Parallelism in Algorithms and Architectures (SPAA) 2020.* Paper
- **Saachi Jain**, David Hallac, Rok Sosic, and Jure Leskovec. MASA: Motif-Aware State Assignment in Noisy Time Series Data. *Workshop on Mining and Learning from Time Series (MiLeTS) at SIGKDD 2019.* Paper
- Jack Urbanek, Angela Fan, Siddharth Karamcheti1, **Saachi Jain**, Samuel Humeau, Emily Dinan, Tim Rocktaschel, Douwe Kiela, Arthur Szlam, Jason Weston. Learning to Speak and Act in a Fantasy Text Adventure Game. *Empirical Methods in Natural Language Processing and the International Joint Conference on Natural Language Processing (EMNLP-IJCNLP 2019).* Paper

Preprints (* indicates equal contribution)

- **Saachi Jain***, Hannah Lawrence*, Ankur Moitra, Aleksander Madry. Distilling Model Failures as Directions in Latent Space. *2022*. Paper
- **Saachi Jain***, Hadi Salman*, Alaa Khaddaj*, Eric Wong, Sung Min Park, Aleksander Madry. A Data-Based Perspective on Transfer Learning. *2022*. Paper
- Hadi Salman*, **Saachi Jain***, Andrew Ilyas*, Logan Engstrom*, Eric Wong, Aleksander Madry. When does Bias Transfer in Transfer Learning? *2022*. Paper
- **Saachi Jain***, Adityanarayanan Radhakrishnan*, Caroline Uhler . A Mechanism for Producing Aligned Latent Spaces with Autoencoders. *2021*. Paper

Teaching Experience

- *Head Course Assistant*: Introduction to Computer Networking (CS144), *Winter 2019*
- *Teaching Assistant*: Cybersecurity (IPS 268), *Fall 2018*
- *Course Assistant*: Advanced Networking (CS244), *Spring 2018*
- *Course Assistant*: Operating Systems (CS140), *Winter 2018*
- *Section Leader*: Programming Abstractions (CS106A/B), *Spring 2016 - Spring 2017*

Awards

- Two Sigma Diversity PhD Fellowship