# Saachi Jain

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## 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\***, Hannah Lawrence\*, Ankur Moitra, Mądry. Distilling Model Failures as Directions in Latent Space. *International Conference on Learning Representations (ICLR) 2023, Spotlight (Top 25%).* Paper

- **Saachi Jain\***, Hadi Salman\*, Alaa Khaddaj\*, Eric Wong, Sung Min Park, Aleksander Mądry. A Data-Based Perspective on Transfer Learning. *Conference on Computer Vision and Pattern Recognition (CVPR) 2023.* Paper

- **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)

- Joshua Vendrow*, **Saachi Jain\***, Logan Engstrom, Aleksander Mądry. Dataset Interfaces: Diagnosing Model Failures Using Controllable Counterfactual Generation. *2023.* Paper

- Hadi Salman*, **Saachi Jain\***, Andrew Ilyas*, Logan Engstrom*, Eric Wong, Aleksander Mądry. 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

- Apple Fellowship