

Shreya Shankar



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Education

University of California, Berkeley, Berkeley, CA. **Aug 2021–present**
Incoming Ph.D. in Electrical Engineering and Computer Sciences

Stanford University, Stanford, CA. **Sep 2015–Dec 2020**
M.S. in Computer Science (Artificial Intelligence track)
B.S. in Computer Science (Systems track)
Advised by Pat Hanrahan

Experience

Industry

Machine Learning Engineer, *Viaduct*, Palo Alto, CA. **June 2019–Jan 2021**
Built systems and machine learning methods for large-scale time series data as the first ML engineer.
Worked with Airflow, Spark, SQL, Python, TensorFlow 2.0, XGBoost, Spark MLlib, and more.

Research Intern, *Google Brain*, Mountain View, CA. **Sep 2017–April 2019**
Researched machine learning security and adversarial examples in collaboration with Stanford AI Lab.
Worked with TensorFlow 1.0, Python, and Borg.
Advised by Alex Kurakin and Ian Goodfellow.

Software Engineering Intern, *Facebook*, New York, **June 2017–Sep 2017**
NY.
Worked on Facebook's civic engagement team to connect users to their government representatives.
Worked with Hack (PHP), ReactJS, SQL, and Python.

Teaching

Teaching Assistant, *Stanford University*, Stanford, **April 2020–June 2020**
CA.
Served as a TA part-time for a remote version of CS110 (Principles of Computer Systems). Taught weekly sections and held weekly office hours via Zoom.

Head Teaching Assistant, *Stanford University*, Stan- **June 2018–Dec 2018**
ford, CA.
Served as head TA for CS106B (Programming Abstractions) and CS101 (Introduction to Computing Principles). Held weekly office hours. Helped write exams and homework grading criteria. Coordinated a staff of undergraduate section leaders.

Undergraduate Section Leader, *Stanford University*, **Jan 2016–April 2018**
Stanford, CA.
Taught weekly sections for CS106A (Programming Methodologies) and CS106B (Programming Abstractions). Held weekly office hours. Graded assignments and exams.

Honors and Awards

- 2021 UC Berkeley EECS Excellence Award
- 2020 Interact Fellowship
- 2015-2019 Rella Lou Danenberg Aldrich Scholarship
- 2017 MIT Solve Challenge Finalist
- 2016 Anita Borg Grace Hopper Conference Scholarship
- 2016 Palantir Women in Technology Scholarship

Recent Talks

- Data + AI Summit, Databricks.** (Upcoming) May 2021
Giving a talk on debugging ML in production and demo-ing my open-source tracing tool.
- MLOps Salon, Verta.AI.** March 2021
Giving a talk on debugging ML in production and participating in a follow-up panel.
- Practical AI Show, Clubhouse App.** March 2021
Featured as a guest to discuss my recent retrospective on predictive modeling.
- MLSys Seminar, Stanford University, Stanford, CA.** February 2021
Gave a talk on debugging ML in production. Code and slides on my Github.
- DSC102, University of California, San Diego, San Diego, CA.** February 2021
Gave a talk on debugging ML in production. Code and slides on my Github.
- Time Horizons Podcast.** February 2021
Machine learning in industry.
- NLP Zurich Meetup, Zurich, Switzerland.** February 2021
Gave a talk on debugging ML in production. Code and slides on my Github.
- OSCON, O'Reilly.** January 2021
Participated as a panelist to discuss open source and machine learning.
- CS329S, Stanford University, Stanford, CA.** January 2021
Gave a tutorial on PyTorch and distributed training.
- Machine Learning Podcast.** October 2020
A day in the life on an Applied ML Researcher.
- Data Engineered Podcast.** October 2020
Lessons learned after a year of putting ML into production.
- Datacast Podcast.** October 2020
Computer Systems, Machine Learning Security Research, and Women in Tech.

Software

mltrace: This project enables coarse-grained lineage and tracing in complex data pipelines.

Toy ML Pipeline: This is a toy example of a standalone ML pipeline written entirely in Python. No external tools are incorporated into the master branch. I built it mainly to experiment with my ideas for ML tooling.

Create ML App: This project makes it easier to spin up a machine learning project locally in Python and handle various package dependencies using a Makefile. It abstracts away pip installs and virtual environment commands from the user.

GPT3 Sandbox: This project enables users to create cool web demos using

OpenAI's GPT-3 API with just a few lines of Python. Co-authored with Bora Uyumazturk.

Service

- Founder of A4 Machine Learning, an organization that teaches machine learning to high school students.
- Former co-director of SHE++, a 501(c)(3) nonprofit that improves diversity in tech.
- Former financial officer of Stanford WiCS (Women in Computer Science).

Program Committee Member

- ICML 2019 Workshop in Adversarial Machine Learning in Real-World Computer Vision Systems
- ICML 2019 Workshop in Security and Privacy of Machine Learning
- NeurIPS 2018 Workshop on Security in Machine Learning

Publications

- [1] Sumanth Dathathri, Krishnamurthy Dvijotham, Alexey Kurakin, Aditi Raghunathan, Jonathan Uesato, Rudy R Bunel, Shreya Shankar, Jacob Steinhardt, Ian Goodfellow, Percy S Liang, and Pushmeet Kohli. Enabling certification of verification-agnostic networks via memory-efficient semidefinite programming. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H. Lin, editors, *Advances in Neural Information Processing Systems*, volume 33, pages 5318–5331. Curran Associates, Inc., 2020.
- [2] Gamaleldin F. Elsayed, Shreya Shankar, Brian Cheung, Nicolas Papernot, Alexey Kurakin, Ian Goodfellow, and Jascha Sohl-Dickstein. Adversarial examples that fool both computer vision and time-limited humans. In *Proceedings of the 32nd International Conference on Neural Information Processing Systems*, NeurIPS'18, page 3914–3924. Curran Associates, Inc., 2018.
- [3] Gamaleldin F. Elsayed, Shreya Shankar, Brian Cheung, Nicolas Papernot, Alexey Kurakin, Ian Goodfellow, and Jascha Sohl-Dickstein. Adversarial examples influence human visual perception. *Journal of Vision*, 19(10):190c–190c, Sep 2019.
- [4] Shreya Shankar, Yoni Halpern, Eric Breck, James Atwood, Jimbo Wilson, and D. Sculley. No classification without representation: Assessing geodiversity issues in open data sets for the developing world. In *NIPS 2017 workshop: Machine Learning for the Developing World*, 2017.

Interests

Triathlons: Competed for Stanford's Triathlon team. Currently training for 2021 Ironman 70.3 Santa Cruz.

Hobbyist musician: Took classical piano and violin lessons from 2003-2015. Gave a senior recital in 2015. Now mainly playing pop songs and random Chopin works.

Writing: Member of a weekly writer's group in San Francisco. Technical writing available at personal website.

Intentional communities: Member of Phoenix House and Haight Street Commons, a network of co-ops in the Bay Area.