Shreya Shankar

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Education

University of California, Berkeley, Berkeley, CA.   **Aug 2021–present**
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

Entrepreneur in Residence, *Amplify Partners*, Menlo   **March 2021–present**
Park, CA.
Building open-source tooling for machine learning software development (MLOps). Press
release here.

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 Scholarship

○ 2016 Palantir Women in Technology Scholarship

Recent Talks

D&I Round Table, *ACM SIGMOD/PODS Conference*.　　　**June 2021**
Participated in a panel on imposter syndrome.

MLOps World Conference, *MLOps World*, Toronto, Canada.　**June 2021**
Giving a talk on debugging ML in production and demo-ing my open-source tracing tool.

Data + AI Summit, *Databricks*.　　　　　　　　　**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).

Reviewing

- ICLR 2022
- NeurIPS 2021
- 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.