

Sadhana Lolla

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EDUCATION

University of Cambridge | Gates Cambridge Scholar

Incoming MPhil in Technology Policy

Selected as one of 26 students in the USA for fully-funded studies by the Gates Cambridge Fellowship

Cambridge, UK

October 2024 - July 2025

Massachusetts Institute of Technology

B.S. in Computer Science with minors in Mathematics and Literature; GPA: 4.9/5.0

Notable Awards: 2024 Rhodes Scholarship Finalist, 2024 Schwarzman Scholar Awardee, MIT HKN Inductee, MIT Gerstle

Undergraduate Research and Innovation Scholar

Cambridge, MA

Sept 2020 - May 2024

Poolesville High School, Class of 2020

Notable Awards: 2020 National Merit Finalist, 2020 Regeneron Scholar

Poolesville, MD

Sept 2016 - May 2020

WORK EXPERIENCE

Microsoft Research | Biomedical ML Group (Advisor: Ava Amini)

Undergraduate Research Intern

Cambridge, MA

June 2023 - Sept 2023

- Selected as one of twenty interns nationwide to participate in the highly selective undergraduate research internship program at Microsoft.
- Investigating uncertainty propagation through neural networks for applications across image processing and language modeling.
- Presented work in an organization-wide talk.

Safar Partners

Analyst

Cambridge, MA

Jan 2023 - present

- Responsible for preparing investment committee memos and evaluating companies as part of a technology venture fund.
- Lead investments across the AI/Robotics space by meeting with and advocating for founders

MIT CSAIL | Distributed Robotics Group (Advisor: Daniela Rus)

SuperUROP Scholar

Cambridge, MA

Aug 2022 - May 2023

- Selected to participate in MIT's advanced undergraduate research opportunities program
- Developing universal controllers that unify the design and control loop when creating soft robots (composed of compliant linkages), which drastically reduces time taken to iterate over soft robot designs.
- Named as a Gerstle Undergraduate Research and Innovation Scholar
- Presented at fall showcase to MIT EECS faculty and sponsors

Themis AI (Advisor: Alexander Amini)

Machine Learning Research Intern

Cambridge, MA

Aug 2022 - May 2023

- Designed and developed a model-agnostic framework for risk awareness to diagnose uncertainty in ML models
- Developing new uncertainty estimation methods that outperform commonly used frameworks in speed and accuracy on benchmarks
- Demos presented to industry leaders, including the head of AI at major automotive OEM
- First-author paper published and presented at NeurIPS Robot Learning Workshop, paper published at ICML Generative AI Workshop

Google | Search

Software Engineering Intern

Mountain View, CA

June 2022 - August 2022

- Improved content recommendation models on the Search Discovery team, to be used by all Google Search users
- Used Tensorflow to investigate the use of ordinal regression to improve prediction heads and enhance information given to ranking models
- Ran a Live Experiment that deployed ordinal models to 3% of all search users and found over 5% increase in user engagement

MIT CSAIL | Distributed Robotics Group (Advisor: Daniela Rus)

Undergraduate Researcher

Cambridge, MA

Jan 2022 - Aug 2022

- Created methods of automatic hard edge case detection using self-supervised techniques to be used with training autonomous vehicles
- Analyzed distribution of latent codes to develop methods of automatic sampling from underrepresented areas of the embedding space

Google | Tensorflow Keras (Advisor: Francois Chollet)

STEP Intern

Mountain View, CA

June 2021 - August 2021

- Selected as one of the top 2% of applicants to Google's software engineering internship program for rising sophomores and juniors
- Created an automated tuners for hyperparameters in Parameter Server Strategy
- Achieved a 79% increase in throughput and 63% decrease in total training time on a crucial internal canary pipeline

PUBLICATIONS

- Yang, Q., Ravikumar, S., Schmitt-Ulms, F., Lolla, S., Demir, E., Elistratov, I., Lavaee, A., **Lolla, S.**, Ahmadi, E., Rus, D. and Amini, A., 2023. Uncertainty-aware Language Modeling for Selective Question Answering. arXiv preprint arXiv:2311.15451.
- Perez, A., Elistratov, I., Schmitt-Ulms, F., Demir, E., **Lolla, S.**, Ahmadi, E., Amini, A.: Risk-Aware Image Generation by Estimating and Propagating Uncertainty. In 2023 International Conference on Machine Learning (ICML), Workshop on Deployable Generative AI
- Lolla, S.**, Elistratov, I., Perez, A., Ahmadi, E., Rus, D. and Amini, A., Capsa: A Unified Framework for Quantifying Risk in Deep Neural Networks. In 2022 Neural Information Processing Systems (NeurIPS), Workshop on Robot Learning.

T A L K S

- 1. TedX Invited Talk: *AI is Biased, But Do We Know Why?* URL: https://www.ted.com/talks/sadhana_lolla_ai_is_biased_but_do_we_know_why
- 2. MIT Introduction to Deep Learning Guest Lecture: *Trustworthy Deep Learning* URL: <https://youtu.be/kIiO4VSrivU>

T E A C H I N G

MIT 6.1800 Computer Systems Engineering
Undergraduate Teaching Assistant

Cambridge, MA
Incoming Jan 2024

- Responsible for coordinating logistics and hosting office hours for one of MIT’s largest computer science classes.

MIT 6.4210/6.4212 Robotic Manipulation
Undergraduate Teaching Assistant

Cambridge, MA
Aug 2023 - present

- Responsible for hosting office hours, developing course content, and helping students with projects and problem sets for MIT’s Undergraduate and Graduate Robotic Manipulation course.

MIT EECS
Associate Advisor

Cambridge, MA
Aug 2023 - present

- Responsible for assisting Professor Vivienne Sze in helping current students choose classes and advising them on their undergraduate careers

MIT Introduction to Deep Learning
Lead TA and Instructor

Cambridge, MA
Nov 2022 - present

- In charge of the largest student-run course at MIT and one of the largest open courses on deep learning in the world, with over 300 students enrolled in-person and thousands who watch lectures virtually.
- Created curriculum for lectures and laboratory assignments, chose guest speakers, and selected other teaching assistants.
- Gave a lecture on Trustworthy AI that now has over 50K views on YouTube.
- As lead TA, held office hours and ran training sessions for other TAs.

Momentum AI
Curriculum Lead and Executive Board Member

Cambridge, MA
Sept 2022 - present

- Executive board member of the only program that teaches AI to underserved students for free in the country.
- Leading a team of seven curriculum creators to make a national curriculum teaching fundamentals of artificial intelligence and computer science to students who may have little to no programming background.
- Curriculum has been taught to over 200 Ukrainian refugees in the US and students from inner-city Boston schools.
- Creating pilot programs to teach artificial intelligence that could scale to any university in the US.

Girls Code Maryland
Founder

Germantown, MD
Aug 2018 - Mar 2020

- Created after-school programs and classes at local libraries for over 300 underserved and minority students.
- Won \$6K in grants funding from the National Center for Women and Information Technology to continue education programs in Maryland.
- Created community of over twenty mentors who still teach the programs I founded.

L E A D E R S H I P

Next Sing
Act Lead (Jan 2022 - present), Act Coordinator (Sept 2022 - present)

Cambridge, MA
Jan 2022 - present

- Responsible for choosing the concert setlist, auditioning members, and onboarding and interfacing with all act leads for the largest a cappella group on campus, with more than forty members.
- Musical director for various acts across difficulty levels.

xFair
Director (2021 - 2022), Member (2020 - 2021)

Cambridge, MA
Aug 2020 - Mar 2022

- Led a team of fifteen students as co-director of the largest student-run career fair at MIT.
- Responsible for organizing logistics, contacting sponsors, onboarding new members, and publicizing the fair.
- Worked closely with Tau Beta Pi (engineering honor society) and MIT’s Career Advising and Professional Development office on logistics.
- Created career opportunities and facilitated networking for over six hundred students and thirty companies.

MIT Society of Women Engineers
Career Development Board Member

Cambridge, MA
Sept 2020 - Aug 2021

- Helped organize and create career development opportunities for over 300 members of the Society of Women Engineers
- Collaborated with a team of 6 others to run SWE’s anniversary career fair and networking sessions