Shobhita Sundaram

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ssundaram21.github.io

Education

Massachusetts Institute of Technology (MIT) — Cambridge, MA
Ph.D. Computer Science — 2022–2027
S.M. Computer Science — 2022–2025
Advisor: Phillip Isola

Massachusetts Institute of Technology (MIT) — Cambridge, MA
S.B. Computer Science, S.B. Mathematics — 2018–2022
Advisors: Pawan Sinha, Xavier Boix, Tomaso Poggio

Publications

** indicates equal contribution*

1. Better Together: Leveraging Unpaired Multimodal Data for Stronger Unimodal Models.
   S. Gupta, **S. Sundaram**, C. Wang, S. Jegelka, P. Isola. *Preprint.*

2. What Makes for a Good Stereoscopic Image?
   N. Tamir, S. Amir, R. Itzhaky, N. Atia, **S. Sundaram**, S. Fu, R. Sokolovsky, P. Isola, T. Dekel, R. Zhang, M. Farber. *CVPR Computer Vision for Metaverse Workshop*, 2025.

3. Personalized Representation from Personalized Generation.
   S. Sundaram*, J. Chae*, Y. Tian, S. Beery, P. Isola. *ICLR*, 2025.

4. When Does Perceptual Alignment Benefit Vision Represenations?
   S. Sundaram*, S. Fu*, L. Muttenthaler, N. Tamir, L. Chai, S. Kornblith, T. Darrell, P. Isola. *NeurIPS*, 2024.

5. DreamSim: Learning New Dimensions of Human Visual Similarity using Synthetic Data.
   S. Fu*, N. Tamir*, **S. Sundaram***, L. Chai, R. Zhang, T. Dekel, P. Isola. *NeurIPS*, 2023 **(spotlight)**.

6. Recurrent Connections Facilitate Symmetry Perception in Deep Networks.
   S. Sundaram*, D. Sinha*, M. Groth, T. Sasaki, X. Boix. *Scientific Reports*, 2022.

7. GAN-Based Data Augmentation for Chest X-ray Classification.
   S. Sundaram* and N. Hulkund*. *KDD Workshop on Applied Data Science for Healthcare*, 2021.

8. Do Neural Networks for Segmentation Understand Insideness?
   K. Villalobos*, V. Štih*, A. Ahmadinejad*, **S. Sundaram**, J. Dozier, A. Francl, F. Azevdo, T. Sasaki, X. Boix. *Neural Computation*, 2021.

Experience

FAIR — Paris, France
Research Scientist Intern — May - October 2025

- *Project:* LLM self-improvement for difficult (e.g., 0% pass rate) reasoning problems.
- *Mentors:* Julia Kempe, Yann Olivier, Kartik Ahuja

Google Research — Cambridge, MA
Student Researcher — December 2023 - March 2024

- *Project:* Synthetic data generation with diffusion models for personalizing vision backbones.

– *Mentors:* Yonglong Tian, Dilip Krishnan

Google DeepMind London, UK
Research Engineering Intern June - August 2022

– *Project:* Data selection for LLM pretraining.
– *Mentors:* Sebastian Borgeaud, Laurent Sifre, Jordan Hoffman, Arthur Mensch

Center for Brains, Minds, and Machines, MIT Cambridge, MA
Undergraduate Researcher September 2019 - May 2022

– *Project:* Recurrent vision models for visual long-range spatial dependencies.
– *Mentors:* Xavier Boix, Pawan Sinha, Tomaso Poggio

The D. E. Shaw Group New York, NY
Quantitative Research Intern June - August 2021

– *Project:* RL tools for portfolio management; outperformed optimal control theory baselines.
– *Mentor:* Konstantin Turitsyn

Apple Cupertino, CA
Machine Learning Intern June - August 2020

– *Project:* Built and deployed an end-to-end ML pipeline on-device for power optimization.

Two Sigma Investments Houston, TX
Software Engineering Intern May - August 2019

– *Project:* A RESTful Flask service and UI to track collections of trading instruments.

Awards

NSF Graduate Research Fellowship 2022 - 2025
HDTV Grand Alliance Fellowship 2022 - 2023
MIT Undergraduate Research and Innovation Scholar 2020
MIT Burchard Scholar 2020

Service & Leadership

Organizer: CVPR Workshop on Synthetic Data for Computer Vision 2024, 2025
Organizer: ECCV Tutorial on Efficient Text-to-Image Modeling 2024
Mentor: MIT Graduate Application Assistant Program 2022 - 2024
Event Coordinator: MIT Graduate Women of EECS 2023
Associate Editor: MIT Science Policy Review 2020 - 2022

Invited Talks

Personalized Representation from Personalied Generation.
CVPR Syntagen Workshop June 2025
Cohere for AI March 2025

Representation Learning with Perceptual Alignment.
Stanford NeuroAILab April 2025

Evaluating Text-to-Image Models.
ECCV Efficient Text-to-Image Modeling Tutorial September 2024

DreamSim: Learning New Dimensions of Human Visual Similarity using Synthetic Data.
Adobe October 2023
Computer Vision Meetup, hosted by Voxel51 July 2023