

Sruthi Sudhakar

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Research Interests

I work at the intersection of computer vision, robotics, and machine learning, with a profound interest in advancing robotics for real-world applications such as robotic surgery and search and rescue.

Education

Columbia University | 2022-2026 (expected)

Ph.D. in Computer Science, co-advised by Dr. Carl Vondrick and Dr. Richard Zemel

NSF Graduate Research Fellow, GPA: 3.91

Georgia Institute of Technology | 2018 – 2022

B.S. in Computer Science, advised by Dr. Judy Hoffman

GPA: 3.96, Faculty Honors

Publications

Conference Papers

- [1] Sudhakar Sruthi, Prabhu Viraj, Krishnakumar Arvind, Hoffman Judy. Mitigating Bias in Visual Transformers via Targeted Alignment. In BMVC, 2021.
- [2] Krishnakumar Arvind, Prabhu Viraj, Sudhakar Sruthi, Hoffman Judy. UDIS: Unsupervised Discovery of Bias in Deep Visual Recognition Models. In BMVC, 2021.
- [3] Sudhakar Sruthi, Prabhu Viraj, Russakovsky Olga, Hoffman Judy. A Framework for Inspecting Biases in Object Detection Systems. In CVPR SSAD Workshop, 2022.
- [4] Sruthi Sudhakar, Jon Hanzelka, Josh David Bobillot, Tanmay Randhavane, Neel Joshi, Vibhav Vineet. Exploring the Sim2Real Gap using Digital Twins. In ICCV, 2023.

Preprints

- [6] Sruthi Sudhakar, Ruoshi Liu, Basile Van Hoorick, Carl Vondrick, Richard Zemel. HandI: Hand Interaction Conditioned Future Prediction. In Submission, ECCV 2024.
- [7] Ruoshi Liu, Junbang Liang, Sruthi Sudhakar, Huy Ha, Cheng Chi, Shuran Song, Carl Vondrick. PaperBot: Learning to Design Real-World Tools Using Paper. In Submission, CoRL 2024
- [8] Junbang Liang, Ege Ozguroglu, Ruoshi Liu, Sruthi Sudhakar, Achal Dave, Pavel Tokmakov, Shuran Song, Carl Vondrick. Dreamitate: Real-World Visuomotor Policy Learning via Video Generation. In Submission, CoRL 2024

Awards

NSF Graduate Research Fellowship | May 2022

President's Undergraduate Research Award (PURA), Competitive Georgia Tech Research Scholarship | May 2021

Richard Tapia Computing Conference Poster Scholarship | September 2021

Teaching Experience

Teaching Assistant, Representation Learning | Fall 2022

Course Instructor: Prof. Carl Vondrick | Columbia University

Grade homework/participation, and answer student questions.

Teaching Assistant, Intro to Computer Vision | Spring 2022

Course Instructor: Prof. Judy Hoffman | Georgia Tech

Create homework, grade homework, and hold office hours.

Leadership/Service

- Dance Teacher (2020 - 2024) – Teach Indian classical dance, Bharatanatyam, weekly through zoom for kids at SOFKIN orphanage in India.
- Volunteer Tutor (2020 - 2024) – Volunteer as a weekly reading/math tutor for Afghani refugee students.
- Volunteer at Soup Kitchen (2019-2022) – Cooked and served food for homeless people in Atlanta weekly at the non-profit organization, Food4Lives.
- Discussion Coordinator in the club SYA (2020-2022) – Created and led weekly group discussions for Sai Young Adults club at Georgia Tech.
- Resident Assistant (RA) (2019-2020) - Supervised freshman living in the freshman residence halls at Georgia Tech.
- Product Manager in the club Bits of Good (2020) – Created a social media platform for the non-profit organization Liv2BGirl.

Academic Research Experience

Georgia Tech x Princeton | Undergraduate Researcher June 2021 - June 2022

- Working with Dr. Judy Hoffman of Georgia Institute of Technology and Dr. Olga Russakovsky of Princeton University to investigate algorithmic biases in deep learning models.

Georgia Tech Computer Vision Lab | Undergraduate Researcher August 2020 - June 2022

- Developed an improved algorithm for mitigating biases while training visual transformers (a

deep learning model architecture). Published “Mitigating Bias in Visual Transformers via Targeted Alignment” at BMVC 21’.

- Investigated techniques to perform unsupervised discovery of dataset and model biases in Deep Learning models. Published “UDIS: Unsupervised Discovery of Bias in Deep Visual Recognition Models” at BMVC 21’.

Georgia Tech Entertainment and Intelligence Lab | Undergraduate Researcher August 2019 – May 2020

- Worked on developing an algorithm to produce natural language explanations for CNN models to improve Explainability of AI.
- Conducted in depth qualitative and quantitative statistical analysis on results of user studies to assess different rationale types.

Work Experience

Microsoft Research | May 2020 - August 2020

Microsoft Research Intern

- Studied the sim2real gap and sought to understand the underlying causes of this gap from the lens of a data artists’ process of creating realistic data. Created a novel synthetic “digital twin” dataset, YCB-Synthetic, which includes not only perfectly matching data to YCB-Real, but also variation artifacts added to the synthetic data. Studied the effects of these artifacts on YCB-Real, and two existing published datasets. Additionally, we provide time-estimates for fixing these artifacts, giving intuition on cost-benefit trade-offs between artist time and trained model accuracy. Published “Exploring the Sim2Real Gap using Digital Twins”.

Bloomberg LP | May 2020 - August 2020

Software Engineering Intern

- Created a Document Classification Machine Learning model with 94.46% accuracy that automatically sorted and processed incoming bond and securities documents. Cut down the “Time to Market” by 6 minutes per document.
- Worked on improving a Multi-label Classification Deep Learning model to extract and annotate information from pdf documents

Microsoft | May 2019 - August 2019

Program Manager and Software Engineer - Explore Intern

- Created a new product for Microsoft Teams called “Classroom Analytics”. Allows teachers to view students’ classroom participation and conversations in the classroom by tracking signals.
- Worked on back-end object modeling, API queries, and data processing (using C# LINQ)

YogaSangeeta (non-profit) | January 2018 - Present

App Developer (Android and Xamarin)

- Developed an Android App, SGS Gita, that allows for students to learn to read texts through an audio tutorial.
- Working with a team to develop a virtual assessment app for teachers to help students learn to read texts.

Bloomberg LP | June 2018 - August 2018

Software Engineering Intern

- Wrote Python scripts to automate engineering tasks done manually, improving efficiency and cutting manual labor time