Samir Yitzhak Gadre

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Research Interests

Self-supervised Learning
3D Computer Vision
Robot Learning

Education

Sept 2020–Present **Columbia University**, Computer Science Ph.D. Candidate
Advisor: Professor Shuran Song
Investigates how agent interaction can improve performance on computer vision tasks like amodal segmentation and pose estimation.
Interested in representation learning and pretraining.

Sept 2014–May 2018 **Brown University**, Sc.B. Computer Science w/ Honors
GPA: 3.66, *Computer Science GPA:* 3.94
Thesis: Teaching Robots Using Mixed Reality
Academic Elections: Sigma Xi
Selected Coursework: Robotics, Reinforcement Learning, Artificial Intelligence, Machine Learning, Probabilistic Methods, Algorithms, Cryptography, Operating Systems, Distributed Systems

Work Experience

Feb 2019–Aug 2020 **Microsoft HoloLens**, Software Engineer II
Manager: Dr. Harpreet Sawhney
Worked on object detection and 6DoF object pose estimation for recently launched Azure Object Anchors.

Past Research Experience

May–July 2018 **Brown University**, Robotics Researcher
Advisors: Professors George Konidaris & Stefanie Tellex
First author on accepted ICRA 2019 paper titled End-User Robot Programming Using Mixed Reality (video). Built an Augmented Reality experience to allow users to program robot motion.

Sept 2017–May 2018 **Brown University**, Honors Candidate
Advisors: Professors George Konidaris & Stefanie Tellex
Defended a thesis titled Teaching Robots Using Mixed Reality (video). Created a Mixed Reality interface to teleoperation an end-effector. Used the interface to train movement primitives for pick-and-place tasks.

May–Aug 2016 **Brown University**, Computer Vision Researcher
Advisor: Professor Benjamin Kimia
Won an Undergraduate Teaching and Research Award to support work on visual odometry and camera pose estimation.

Teaching Experience

Sept–Present **Computational Aspects of Robotics**, Graduate Teaching Assistant
Taught by: Professor Shuran Song
Holds office hours, grades student code submissions, designed a 3D computer vision homework assignment.

Jan–May 2018 **Algorithms & Data Structures**, Teaching Assistant
Taught by: Professor Seny Kamara
Co-led weekly sections and office hours to help students understand canonical algorithms. Graded code and proofs of correctness.

Sept–Dec 2016 **Object Oriented Programming**, Teaching Assistant
Taught by: Professor Andy van Dam
Staffed office hours to help students understand object oriented paradigms and debug code. Graded code based on functionality and style.

Invited Talks

Oct 2018 **University of Washington Robotics Colloquium**, Speaker
Gave talk titled Virtual and Mixed Reality Interfaces for Human-Robot Interaction, which addressed the design and implementation of such interfaces.

Service

Nov 2020–Present **Columbia Pre-submission Application Review (PAR)**, Reader
Provided a helpful round of comments on statement of purpose materials submitted by students intending to apply for Ph.D. admission.

Sept 2014–May 2016 **Outdoor Leadership and Environmental Education**, Mentor
Mentored 3-5 high school students per year on topics related to college admissions and internships. Taught science workshops.

Skills

Technical pytorch, ROS, MoveIt!, Unity, Linux, Windows, python, C, C++, C#

Interests ultimate frisbee, reading, skiing, house plants

References

Prof. Shuran Song, Columbia University: shurans@cs.columbia.edu
Dr. Harpreet Sawhney, Microsoft: harpreet.sawhney@microsoft.com
Prof. George Konidaris, Brown University: gdk@cs.brown.edu