Sankalp (Sunny) Agrawal

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EDUCATION

The Ohio State University, Columbus OH. December 2025
Bachelor of Science in Electrical and Computer Engineering. ***GPA: 3.98/4.0***

- Dean's List (all semesters), Minors: Robotics and Autonomous Systems, Physics

COURSEWORK

Graduate: Machine Learning, Real Time Robotics, State-Space Control, Machine Learning for Data Analysis, Autonomous Vehicles

TECHNICAL SKILLS

Programming Languages & Tools: Python, C++, MATLAB, ROS, Linux, Git, SolidWorks
Libraries: PyTorch, TensorFlow, scikit-learn, JAX, MuJoCo, IsaacGym, NumPy, SciPy, OpenCV

RESEARCH & PROFESSIONAL EXPERIENCE

Carnegie Mellon University | **Interactive and Trustworthy Robotics Lab** | Advisor: Andrea Bajcsy
Undergraduate Research Fellow – Robotics Institute Summer Scholar (RISS) May 2025 – Dec 2025

- Developed a novel approach for conditioning safety behavior on an image of potential failure in robotic manipulation, adding the ability to adapt to changing safety requirements in the real world at deployment.
- Implemented world-model training and reinforcement learning algorithms, conducted hardware experiments and wrote a first-author ICRA 2026 submission.

University of Southern California | **Learning and Interactive Robot Autonomy Lab** | Advisor: Erdem Bıyık
Amazon Research Fellow – Viterbi Summer Undergraduate Research Experience (SURE) May 2024 – Aug 2025

- Investigated improving the sample-efficiency of Bayes-Adaptive Meta-Reinforcement Learning by designing, testing, and analyzing new partially informed training strategies.
- Implemented reinforcement learning algorithms from scratch, validated them through experiments, and maintained a collaborative GitHub codebase for the research team.

The Ohio State University | **Cyberbotics Lab** | Advisor: Ayonga Hereid
Undergraduate Research Assistant Sep 2022 – Dec 2025

- Researched reinforcement learning methods for sub-goal planning for humanoid navigation and contributed on ICRA 2026 paper submission.

Undergraduate Research Fellow – Summer Research Opportunities Program (SROP) May 2023 – July 2023

- Investigated mass parallel training for humanoid locomotion, dramatically decreasing training times.

Bilstein thyssenkrupp | Industrial Robotics Intern May 2022 – Aug 2022

- Automated production-line processes by integrating collaborative UR 6-axis robot manipulators, applying mechatronics and robotic automation principles to improve reliability and throughput.

PROJECTS

Self-Tuning Instrument | Senior Capstone Project Jan 2025 – Dec 2025

- Designed and built a self-tuning ukulele by integrating embedded hardware, motor actuation, and real-time signal processing.
- Implemented pitch detection, control logic, and software to automate tuning through closed loop feedback.
- Understood and integrated customer requirements, producing demonstrations, reports, and design reviews.
- Skills: Embedded Systems, Signal Processing, C++, Motor Control, Mechatronics

PUBLICATIONS

[1] **S. Agrawal***, J. Seo*, K. Nakamura, R. Tian, and A. Bajcsy, 'AnySafe: Adapting Latent Safety Filters at Runtime via Safety Constraint Parameterization in the Latent Space', *ICRA 2026 (in submission)*
Paper | Website

[2] C. Peng, Z. Zhang, S. Gong, **S. Agrawal**, K. A. Redmill, and A. Hereid, 'Reinforcement Learning with Data Bootstrapping for Dynamic Subgoal Pursuit in Humanoid Robot Navigation', *ICRA 2026 (in submission)*
Paper

POSTER PRESENTATIONS

AnySafe: A Generalizable Framework for Constraint-Conditioned Latent Safety Analysis Aug 2025
- Presented at the 2025 CMU RISS Research Showcase [Poster]

Using Partially Observed Belief States for Bayes-Adaptive Meta-RL Aug 2024
- Presented at the 2024 USC SURE Research Showcase [Poster]

Investigating Mass Parallel Reinforcement Learning to Train Bipedal Robot Locomotion April 2024
- Presented at the 2024 Ohio State Spring Undergraduate Research Festival (SURF) [Poster]

TEACHING & SERVICE

ECE 5463: Introduction to Real Time Robotics Systems (Graduate), *Teaching Assistant* Spring 2024

Ohio State Mathematics and Statistics Learning Center Jan 2023 – April 2024
Math Tutor
- Tutored over twenty students in Linear Algebra and Differential Equations through weekly appointments.
- Learned to effectively communicate and explain complex ideas.

HONORS & AWARDS

Google Undergraduate Research Fellow at Carnegie Mellon University Summer 2025
- Member of the Carnegie Mellon University RISS 2025 Cohort (1 of 39 Scholars).
- Awarded scholarship from **Google Robotics** to conduct research on robot safety.

Amazon Undergraduate Research Fellow at University of Southern California Viterbi Summer 2024
- Member of the USC Viterbi SURE 2024 Cohort (1 of 38 Scholars).
- Awarded scholarship from **Amazon** to conduct research on Bayes-Adapative Meta-RL methods.

Dean's List All Semesters
Ohio State Maximus Merit Scholarship May 2022
IEEE College Scholarship for 1st place at Science Olympiad Nationals May 2021

LEADERSHIP & INVOLVEMENT

Black x Bold Magazine, *Senior Photographer* August 2023 – Dec 2025
- Serve on the leadership team as Senior Photographer, contributing to magazine layout decisions and producing photography featured in five issues, including three cover photos.
- Highlight multicultural student organizations through campus photography projects and lead outreach efforts that strengthen visibility, community engagement, and cross-cultural awareness.

Buckeye Capture, *Founder* January 2024 – Dec 2025
- Founded and lead a 10-member photography team that provides free professional media support to student organizations.
- Partnered with more than 25 clubs to deliver high-quality branding and outreach content, strengthening campus visibility and engagement.