

Aragya Goyal

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EDUCATION

- University of Pittsburgh** Pittsburgh, PA
 - B.S. - Computer Engineering (Autonomous Systems Focus); GPA: 3.99* *August 2022 - April 2026*

SKILLS

- Languages:** Python, C++, ARM Assembly
- Technologies:** Linux, ROS, Github, Solidworks, MATLAB, Microsoft Products, Arduino, Raspberry Pi, OpenCV
- Manufacturing:** Milling, Soldering, Laser Cutting, General Shop Tools

RELEVANT EXPERIENCE

- Carnegie Mellon University - Robotics Institute (Biorobotics Lab)** Pittsburgh, PA
 - Undergraduate Researcher (Part-Time)* *April 2023 - Present*
 - Underwater Snake Robot:** (Link: <http://tinyurl.com/humrsCMU>)
 - Implemented High-Frequency Injection methods in BLDC thrusters to achieve control at low/zero speeds.
 - Working to implement station-keeping feature using AprilTags and IMU readings.
 - Apple's E-Waste Recycling Project:** (Link: <https://tinyurl.com/applecmu>)
 - Created large datasets for Machine Learning Models to detect screws in e-waste images.
 - Integrated ROS and Python packages to track ArucoTags using a Realsense camera for localization of robotic arm.
 - Manufactured custom AprilTags using lasercutters and sheet metal manufacturing methods.
- Society of Astronautics and Rocketry** Pittsburgh, PA
 - Chief Engineer (Student Led Organization)* *August 2022 - Present*
 - Leading a group of approx. 30 students to design and fabricate a rover to participate in the University Rover Challenge. (Link: <https://tinyurl.com/roverimages>)
 - Quickly established oneself as a valuable contributor to the team's efforts, taking on a lead role in the development of the robotic hand using pneumatic technology. (Link: <https://tinyurl.com/hydraarm>)
- FIRST Robotics** Exton, PA
 - Team Captain/Design Lead (Student Led Organization)* *January 2023 - May 2023*
 - Led a team of 40 students and qualified for the Worlds level of competition, the highest win percentage since 2005, and a top 5% ranking globally. (Link: <https://tinyurl.com/dewbot17>)
 - Utilized Solidworks to design and develop competition and award-winning robots.
- VEX Robotics** Royersford, PA
 - Team Captain (Student Led Organization)* *January 2023 - May 2023*
 - Organized VEX robotics competition event for 60+ teams, hosted workshops to teach CAD to fellow club members, and received recognition for outstanding leadership. (Link: <https://bit.ly/3w7a6b1>)
 - Qualified for the State's level of competition for all 4 years of high school.

PROJECTS

- STM-32 Elevator Simulator (ARM Assembly, Project Integration):** Designed and Implemented software architecture in ARM Assembly to operate a physical elevator simulator PCB. (Link: <https://tinyurl.com/stmelevator>)
- Custom Cane (Human Centered Design, Solidworks, Presentation):** Designed and manufactured a Walker-Cane Fusion to make bathrooms more accessible for wheelchair users. The project won first place at the Senior Design Expo within its category. (Link: <https://tinyurl.com/CustomCane>)
- Formula SAE E-Brake Bias (Solidworks):** Developed an award winning e-brake bias system for a formula style racecar, utilizing Solidworks and 3D printing technology to enhance performance and usability. (Link: <https://tinyurl.com/ebrakeb>)
- String Art Generator and Optimizer (Research, Python):** Developed an innovative string art optimization tools and GUI using Python programming to improve upon existing string art generators. (Link: <https://tinyurl.com/goyalstring>)
- Silicon Prosthetic Hand (Research, Solidworks):** Designed and Manufactured prototype prosthetic hand with silicone soft actuators and tested with human participants for AP Research Project. (Link: <https://tinyurl.com/myprosthetic>)
- Bird Sanctuary Restoration (Eagle Scout Project, Volunteering):** Organized a project to restore parts of the Audubon Bird Sanctuary by painting fences, guardrails, and small buildings. (Link: <https://tinyurl.com/goyaleagle>)

AWARDS AND SPECIAL INTERESTS

- General Awards:** Dean's Honor List (2021-Present), Honor List (2021-Present), Eagle Scout
- Engineering Activities:** FSAE Innovation Award, FIRST Chairman's Award, FIRST Excellence in Engineering, FIRST Industrial Design Award, VEX Judges Award