

# Saagar Arya

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## EDUCATION

### Duke University Pratt School of Engineering

Durham, NC

*Bachelors of Eng. Electrical and Computer Engineering / Computer Science*

*Aug. 2023 – May 2027*

**GPA:** 3.92 Deans List (Spring 2024, Fall 2024) with Distinction (Fall 2023)

**Relevant Coursework:** Fault Tolerant Computing, Design to Deliver, Adv. Computer Architecture, Algorithms

## PATENTS

**Utility Patent:** Flute Rests 11/2022 #11587538

**Provisional Patent:** Skull Clamp Pressure Monitor 10/2024

## EXPERIENCE / PROJECTS

### Chief Engineer | Duke Robotics Club

August 2023 – Present

- Lead a team of roughly 50 Engineers in designing and engineering an autonomous underwater robot for the international RoboSub competition
- Oversee all technical teams (electrical, mechanical, software) to ensure effective integration of all AUV systems
- Built & Implemented: Torpedoes, Hydrophones to track the location of a pinger, Computer vision models
- Leading a team to develop a new autonomous underwater robot

### Skull Clamp Pressure Monitor | Provisional Patent 10/2024

August 2023 – Present

- Designing a digital pressure reading system for Skull Clamps - a neurosurgical aid that holds the skull rigid during surgery but has unreliable pressure readings and is hard to monitor throughout surgery
- Fabricated PCB with 2-stage op-amp, digital potentiometers, Bluetooth, RGB LEDs, and noise minimization
- Designed and fabricated modified steel skull clamp pins with integrated strain gauges to measure deformation
- Mapped strain readings to force readings which are transmitted via Bluetooth and monitored throughout surgery

### Software Engineering Intern – Mission Systems

May 2025 – Present

*Northrop Grumman*

*Annapolis, MD*

- Working as a full stack developer in C++, XML, XSD, Google Test suite on GATR

### Technical Research Intern

September 2023 – Present

*Marine Robotics and Remote Sensing Lab*

*Beaufort, NC*

- Using a YOLOv8 machine learning (AI) models to detect seals in drone data from Glacier Bay National Park
- Comparing seal location with ice density gives clues about habitat preference and guide conservation strategies
- Implemented a Lidar system on an autonomous terrestrial rover to create digital twins of surveyed areas
- This system is also being used to map terrain under forest canopies which aerial surveys have trouble capturing

### ETSY Flute Accessory | Utility Patent Granted 11/2022 #11587538

April 2020 – Present

- Created a unique 3D-printed solution for flute rests
- Operate the business end to end, all functions including customer service, printing flute rests, finance reporting
- Work independently with music stores for wholesale orders

### Software Engineering Intern

June 2022 – September 2024

*Tarigma Corporation / Paid / Hybrid*

*Columbus, OH*

- Worked as a full stack developer in SQL, Java, React, Spring, JS, XML, TSX developing G.E.M., a power grid monitoring software
- Developed admin and setup features to help monitor and detect issues in the global/US electrical power grid
- Developed a fault locator page that allows engineers to run fault calculation manually - particularly helpful when line geometry is incorrect

### Drone from Scratch | High School

2018 – 2019

### Combat Robotics | High School

2019 – 2023

## TECHNICAL SKILLS

**Languages/Frameworks:** Java, Python, C++/C, SQL, JS, React, TSX, XML, Spring, ROS, Kotlin, Bash

**Softwares:** CAD & CAM in Autodesk Fusion 360, Solid Works, VLSI in Autodesk Eagle, Altium, KiCad EDA

**Physical Tools:** Laser cutting, 3D modeling & printing, Metal Anodizing, CNC cutting, Water Jet

**Machine Learning:** Computer Vision, Extract Transform Load, Yolo V8 & Image Recognition

**Environment/IDES:** VScode, Intelli-J, Anaconda, Docker, DataGrip

**Additional Qualifications:** Eagle Scout