

MATTHEW SCHRICKER

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Education

Johns Hopkins University, Baltimore

2027 Graduation

- Double Major in Computer-Engineering and Economics, Minor in German
 - GPA: 3.71
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Research and Projects

Undergraduate Research Assistant (August 2023 – Present)

Helping to develop large-scale tactile-sensing arrays using piezoresistive materials and dual-tone multi-frequency encoding. Familiar with electronic schematics and PCB design while learning to use Solidworks.

Personal Website with Apache Tomcat Backend (November 2023 - Present)

Prototyping personal website to learn web backend and gain experience with SQL databases and servlets. Website is live through an AWS EC2 instance and an Apache Tomcat server, along with an ElephantSQL database for saved info.

Analyzing Driver Assistance Features & Road Safety (March 2023, Actuarial Foundation Datathon)

Used R-Studio along with Python to effectively combine/sort large auto datasets based on several driver-assistance features to analyze changes on crash severity and frequency.

Two-Stage High Power Demonstrator Rocket with Active Stabilization (December 2023 – Present)

Adding dual ejection capability along with first stage to Zephyr L1 rocketry kit. Including active fin stabilization through 12g servos controlled by custom PCB with gyro/accelerometer guidance in first stage, with second stage avionics controlling ignition processes and live video/GPS transmission to ground station using LORA transmitter module.

Activities and Societies

• Astrojays Rocketry (August 2023 – Present)

Member of the Avionics subsection and am improving ground station tracking software in Arduino for the 10K foot competition rocket. Goal is to properly orient robotics antennas in vehicle direction during flight, which necessitates computing vehicle 3D location using GPS signals and altimeter readings transmitted over LORA receiver.

• Johns Hopkins Brain-Computer Interface Society (August 2023 – Present)

Working to process EEG signals from 16-signal cap to direct telehealth robot controlled with Raspberry Pi. Using hosted website to transfer EEG command data and video stream from user to a long-distance robot on different WiFi network.

• Cary Academy Rocketry Captain (2021 – June 2023)

Designed a medium-power rocket capable of carrying eggs with high accuracy to an exact altitude of 835 feet. Created PID algorithm for the altitude control system, and the team won 1st place in the American Rocketry Challenge presentation competition and best first-time competitor.

• Johns Hopkins Kendo (August 2023 – Present)

Relevant Coursework

Freshman Fall: Linear Algebra, Intermediate Probability & Statistics, Gateway to Java, Elements of Macroeconomics, Advanced German I

Freshman Spring: Physics II, Digital Systems Fundamentals, Computational Modelling for ECE (MATLAB), Intermediate Programming (Taught in C), Advanced German II

HS Junior/Senior year at Waketech Community College: Introduction to SQL, Python II, and Introduction to Web Pages

Work Experience

East Carolina Pets – Aquarium Technician (April 2021 – August 2023)

Data Science Intern – Gilead Sciences (May -- June 2022)

Cary, North Carolina

Raleigh, North Carolina

Skills

- Statistical software: Experience in R-Studio, Tableau, and Excel.
- Programming experience: Python, C, Java, MATLAB
- Experience with Apache Tomcat/Servlets/SQL and Linux SSH
- Electrical Hardware: Arduino Teensy 4.0, PCB design in KiCad
- C1 Fluency in German