MATTHEW SCHRICKER

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Education

Johns Hopkins University, Baltimore **2027 Graduation**

• Double Major in Computer-Engineering and Economics, Minor in German

Research and Projects

Scalable Textile Sensors for E-Skins (August 2023 – Present)

Helping to develop large-scale textile-sensing arrays using piezoresistive materials and dual-tone multi-frequency encoding. Using C and MATLAB to significantly increase the size of sensing matrixes while reducing latency. Familiar with electronic schematics and PCB design while learning to use Solidworks. Working under PhD student Arik Slepyan in the JHU Neuroengineering and Biomedical Instrumentation Lab.

Nitrous-Oxide Hybrid Rocket Motor (2022-June 2023)

Prototyped a gaseous nitrous-oxide hybrid rocket motor with paraffin wax fuel cell. Designed and lathed a graphite bell nozzle utilizing Openmotor and reached initial ignition tests. Implemented a hot fire test stand with wireless radio ignition, temperature monitoring, and oxidizer flow control through Arduino Teensy 4.0.

Analyzing Experiential Learning Trends in North Carolina (March 2023, North Carolina Education Datathon)

Modelled the effects of experiential learning on student success in North Carolina. Used R-Studio along with a Google-Maps API to effectively model the location-based effects of experiential learning opportunities on students.

Activities and Societies

• **Astrojays Rocketry (August 2023 – Present)**

Member of the Avionics subsection and am coding ground station tracking software in C for the 10K foot competition rocket. Learning embedded systems to properly orient antennas in vehicle direction during flight, which necessitates computing vehicle orientation measurements, GPS signals, and accelerometer readings. Working on L2 rocketry certification.

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

Using linear regression and random forest algorithms to analyze motor signals from 16-channel EEG cap. Helping to process signals for electric-wheelchair control.

• **Cary Academy Rocketry Captain (2021 – June 2023)**

Founded and managed rocketry club which competes annually in The American Rocketry Challenge. Designed a medium-power rocket capable of carrying eggs with 99.2% accuracy to an exact altitude of 835 feet. Created PID algorithm on custom PCB for the altitude control system, and the team won 1st place in the national presentation competition and best first-time competitor.

Relevant Coursework

Freshman Fall: Linear Algebra, Intermediate Probability & Statistics, Gateway to Java, Elements of Macroeconomics, Advanced German 1

Freshman Spring (planned): Physics II, Digital Systems Fundamentals, Computational Modelling for ECE (MATLAB), Intermediate Programming, 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) Cary, North Carolina

Data Science Intern – Gilead Sciences (May -- June 2022) Raleigh, North Carolina

Skills

• Statistical software: Experience in R-Studio, Tableau, and Excel.
• Ability to communicate effectively and collaborate with a diverse group of team members
• Programming experience: Python, C, Java, MATLAB
• Electrical Hardware: Arduino Teensy 4.0, designing PCBs in KiCad
• C1 Fluency in German