Aparupa Brahma
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Objective

Motivated second year computer engineering student with hands-on experience in avionics systems, object-oriented programming, and cybersecurity. Presents a versatile candidate who can bring a unique skillset to the intersection of software, hardware, and security. **Seeking Summer 2025 internship.**

Education

Georgia Institute of Technology | Atlanta, GA *August 2023 – Present*
Bachelor of Science in Computer Engineering, GPA 4.00 Expected Graduation, May 2027

- Circuit Analysis**:** DC and AC circuit theory and analysis
- Digital System Design**:** Boolean algebra; combinatorial and sequential logic; memory organization and datapaths
- Introduction to Object Oriented Programming**:** Java; OOP principles like encapsulation, inheritance, polymorphism

Skills

Programming Languages: Python, Java, JavaScript, TypeScript, HTML, CSS, Swift
Tools and Platforms: Linux, Git, GitHub, Microsoft Office Suite
Organizations: Yellow Jacket Space Program, Society of Women Engineers, Women in Electrical and Computer Engineering

Experience

Locomation, Inc. | Product Security Intern | Pittsburgh, PA *June – July 2022*
Autonomous trucking company developing human guided driving technology.

- Guided research on cybersecurity vulnerabilities through CAN, Cellular, and C-V2X communications, resulting in improved company understanding of product risks
- Communicated the importance of the STRIDE model and threat modeling during the product development phase
- Delivered preliminary vulnerability assessment to over 5 member leads of the Cybersecurity and Communications teams, detailing potential attack methods such as Denial of Service, side channel, and spoofing attacks

Code Ninjas | Coding Instructor | Fishers, IN *October 2021 – June 2023*
Educational company providing coding lessons to kids ages 5-14 through unique platform and curriculum.

- Improved coding skills for 20+ students by teaching programming concepts such as conditional logic and functions
- Utilized and adapted new technologies: OpenShot video software, Microsoft MakeCode, Roblox Studio, MCreator

Extracurricular and Certifications

GE Aerospace Electrical Engineering Job Simulation on Forage *June 2024 – June 2024*

- Completed a job simulation involving electrical system design and troubleshooting navigation issues under adverse conditions, enhancing skills in aerospace systems engineering.
- Acquired technical proficiency in electrical distribution planning, circuit breaker selection, and compliance with aerospace standards using industry-standard tools and methodologies.
- Developed critical thinking and problem-solving abilities to diagnose and strategize solutions for avionics reliability in challenging environmental conditions, employing simulation software for environmental impact assessment.
- Strengthened technical documentation and reporting skills, creating comprehensive design proposals and assessment plans that adhere to rigorous aerospace engineering protocols and safety requirements.

Yellow Jacket Space Program | Avionics Team Member *September 2023 – Present*
Liquid Rocketry team

- Developed pages of GUI using Solid.js, producing reactive application written with TypeScript, JSX, & CSS
- Leading the integration of an interactive P&ID Diagram into the GUI by implementing GoJS, aimed at enhancing user interaction
- Implementing importing/exporting feature to convert JSON files into stored data and vice versa
- Acquiring experience with System Avionics Module, wire harnessing, and integrated testing

Cyber-Physical Systems Research Project | Device Modeling Team Member *January 2024 – Present*
Team research project focused on improving smart grid security through co-simulation and substation modeling.

- Using object-oriented principles in Python to model simulation components, like controllers and sensors
- Employing the HELICS and GridLAB-D simulation frameworks, working to achieve event-driven simulation
- Collaborating with the Robot Operating System (ROS 2) team to establish connection between robotic system and HELICS