Vihaan Dutta

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EDUCATION

University of Michigan – College of Engineering   **Ann Arbor, MI**
B.S.E. in Computer Science | Current GPA: 3.67/4.00   *Aug 2024 – April 2027*
- **Awards:** Engineering Scholarship of Honor, Dean's List, University Honors
- **Courses:** Data Structures and Algorithms, Intro to Computer Organization, Computational Linear Algebra

EXPERIENCE

Michigan Strength Augmenting Robotic Exoskeletons (M-STARX)   Ann Arbor, MI
Exoskeleton Arm Monitor Device Team Lead   *Aug 2024 – Present*
- Spearheading a group of 5 students in the development of a wearable watch-like device to monitor and modify live data from a lower-body powered exoskeleton's SBC and enable the user to adjust movement algorithms in real-time.
- Innovating the electrical system and UI of the device, utilizing OnShape (CAD) to fabricate the shell and C++/MicroPython to program a Raspberry Pi Pico 2 microcontroller. Working with UART, I2C, SPI, and CAN bus.
- Interfacing with a variety of internal teams to ensure device compatibility and success of the project.
- Elected as the 2025-2026 M-STARX Programming Director to oversee the Algorithm and Arm Monitor teams.

Strategic Tech Solutions   Remote
Business Development Intern   *June 2024 – Present*
- Initiated Python package project to interface with SharePoint's API to vectorize and store 50K+ documents with HuggingFace sentence-transformers, Pinecone DB, and scikit-learn to match company capabilities with contracts.
- Developed TF-IDF, bag-of-words, and file-formatting scripts in C++ to drive project efforts and file organization.
- Maintaining an archive of 30+ project write-ups while optimizing SharePoint search utility to boost productivity.

Chesapeake Controls   Glen Allen, VA
Information Technology Intern   *June 2023 – Aug 2023*
- Worked alongside Lead Programmer and Manager of System Administration.
- Programmed water boiler controls for a public building project using Tridium's Niagara® software.
- Replaced a $100+/year paid backup service (Resilio) with open source alternative (Syncthing) to offsite NAS.
- Implemented Intrusion Detection System (IDS) for the entire company network and a monitoring solution for the internal server health of 5 dedicated file servers with custom AWS ELK stack solution.

Deep Run: Center for Information Technology   Glen Allen, VA
Agile/SCRUM Application Project Manager & Member   *Feb 2022 - April 2023*
- Launched website for the Intelligent Transportation Society of Virginia (ITSVA) with WordPress/cPanel. Presented website features and modifications at ITSVA's annual conference of 250+ people.
- Managed a team of 6 students to create a Python (Flask) web app using Agile/SCRUM for analyzing periods of performance, handling secure presentations and live slide uploads for the CIT. Continued communication and development during a period of hospitalization due to injury.

Congressional App Challenge   Glen Allen, VA
Software Developer w/Two Consecutive Wins   *July 2021 - Dec 2022*
- Designed web platform demo with Python and MongoDB to connect businesses to freelancing students with the support of Richmond Debate Institute. Invited to and presented the platform at Capitol Hill.
- Produced desktop program with Python & Qt framework to flexibly sort files from a source directory, eliminating manual organizing in virtual learning. Garnered a news feature and 10,000+ views.

ADDITIONAL PROJECTS

- Implemented NLP & ML algorithm in C++ to predict the subject of a classes' help forum posts with 87% accuracy.
- Engineered animatronic helmet with custom mechanical eye system manipulated by microcontroller in real time.
- Automated weekly updates of ~100 Salesforce CRM entries, cutting work time by >50% w/Selenium script.

SKILLS & INTERESTS

- **Languages:** C/C++, Python, R, Golang, Java, HTML5/CSS/JavaScript.
- **Technologies**: Git/GitHub, Docker, Node.js, NumPy, PyTorch, MongoDB, Kafka, Microsoft Office