**Sahaj Singh**

Sahaj@vt.edu | (703) 826-6270 | 12621 Winter Wren Ct, Herndon, VA-20171 | https://github.com/Sahajs04

**EDUCATION**

**Virginia Tech College of Engineering**, Blacksburg, VA December 2025 (expected Graduation)

*BS in Computer Science* *|* GPA: 3.97

*Awards*: Dean’s List Fall 2022 – Spring 2024, Norrine Bailey Strong Start Honoree

*Relevant Coursework*: Computer Organization, Object-Oriented Programming, Data Structures and Algorithms, Mobile app Development, Calculus I-III, Discrete Math, Combinatorics, CodePath Intermediate Cybersecurity, Intermediate Software Design, Computer Organization II, Data Structures & Algorithms

**WORK EXPERIENCE**

**Stryker,** *Incoming SWE Intern, San Jose, CA* May 2025-August 2025

**Hume Center for National Security and Technology at Virginia Tech,** *Reinforcement Learning Research Assistant July* 2024 – Present

* Participated in the Navy-sponsored Continuously Adaptive Autonomous System (CAS) project, focusing on Reinforcement Learning in multi-agent systems.
* Utilized GitLab for version control and collaborative development, ensuring a well-organized and maintainable codebase throughout the project.
* Modified and optimized the existing codebase in JupyterLab to implement new experiments and features.
* Conducted detailed analysis of agent behaviors and system outcomes, contributing to the refinement of reward structures and observation parameters.

**Stryker,** *Digital Transformation**Intern, Mahwah NJ*May 2024 – August 2024

* Developed and implemented Power BI dashboards to visualize data from industrial machines, tracking Overall Equipment Effectiveness (OEE) metrics enabling real-time monitoring of machine performance, leading to a 20% reduction in downtime by identifying and addressing critical issues promptly.
* Developed Python scripting within Ignition to create a test environment with simulated values, enabling the development of real-time dashboards before connecting industrial machines to Stryker's internal network using Ignition and Kepware.
* Developed a Flask backend service to interact with Stryker's Microsoft Azure database, exposing RESTful API endpoints and creating visualizations using HTML, JavaScript, and CSS.
* Gained insights into the manufacturing process and Medical Device industry, including validations and change control procedures.

**Fairfax County SACC,** *STEM Instructor*May 2022 – August 2022

* Worked as a STEM instructor, instructed basic computer skills sessions, introduced programming concepts, and led activities.
* Acquired valuable leadership skills to connect with and provide guidance to youth in the community.

**PROJECTS**

**Hackathon Winner, HackOverflow** May 2024

* Created a device that automates garden plant care by monitoring soil moisture, humidity, and temperature to ensure optimal growing conditions.
* Utilized an Arduino programmed in C++ to control various environmental sensors. Developed the front end with React and JavaScript, providing user interface.
* Constructed the backend with Node.js and Express.js for data processing and storage. Won the hackathon and received a cash prize.

**HooHacks 2024** March 2024

* Built interactive user interfaces using CSS, React and JavaScript to visualize predicted stock prices generated by a Random Forest model.
* Integrated Yahoo Finance API to retrieve stock information and developed RESTful APIs using Python and Flask to enable communication between front-end and back-end systems.

**VT Hacks Hackathon XI** September 2023

* Developed "Handify," a Python-based application, utilizing computer vision from OpenCV
* Utilized Roboflow to develop pre-trained machine learning models capable of interpreting live webcam hand signals.
* Integrated the pre-trained models with the Spotify API to produce a hands-free music experience, providing accessibility for visually impaired.

**Vacation Rental Website**  August 2023

* Created a Vacation Rental website to showcase rental properties. Implemented the front-end using HTML, CSS, JavaScript, and React.
* Seamlessly integrated modules for credit card payment using the Stripe API, booking calendar, emails, reviews, and request-to-book options.

**SKILLS AND INTERESTS**

* *Computer* Skills: Git, Linux, Unix terminal, Tableau, Data Analysis, Database Management, Microsoft Office Suite, XML, Bash, Power BI, Azure Cloud Management, Azure Blob Storage, Azure SQL Database, Azure Storage Explorer, Reinforcement Learning, JupyterLab, Jupyter Notebooks
* *Language Skills*: Java, C, Python, C++, Java Script, CSS, HTML, Kotlin, MATLAB, SQL, React.js, Next.js, NumPy, Flask, X86 Assembly

**CLUBS AND ORGANIZATIONS**

**Artificial Intelligence and Machine Learning Club** August 2023 - Present

* Engaged in weekly workshops and contributed to group projects over the semester.
* Aided personal AI/ML projects and increased proficiency in Machine Learning APIs.

**President of the Veg Club** January 2024 – August 2024

* Hosted events and lectures to have discourse around vegetarian/veganism and environmental sustainability.