Soham Gandhi

Ashburn, VA | 973-216-6660 | sgandhi25@vt.edu | /in/soham-gandhi/ | sohamgandhi.dev | **Secret Clearance**

EDUCATION

Virginia Tech   *Expected May 2025*
B.S. in Computer Engineering & B.S. in Electrical Engineering   **Junior Honors**
Majors in Machine Learning and Controls, Robotics, & Autonomy, Minor in Computer Science   **GPA:** 4.0 / 4.0

Activities: Calhoun Honors Discovery Program, Apex Center Incubator, Collab, IEEE, AI/ML Club, Blockchain Club

Relevant Coursework: Discrete, Signals and Systems, Circuits and Devices, Digital Systems, Physical Electronics

Awards: Calhoun Honors Discovery Scholar, VT Dean's List (Fall 2021 – Present), HackViolet 2023(Best Innovation Hack), HackDuke 2021 (Best Financial Hack, 1st Place Education Track), HackViolet 2022 (Ut Prosim Award)

Thomas Jefferson High School for Science and Technology   Graduated June 2021
Advanced Studies Diploma, Governor's Seal   **GPA:** 4.25W

SKILLS

Programming: Python, Java, C, C++, C#, JavaScript, Bash, MATLAB, Verilog, Solidity, OpenCV, TensorFlow
Platforms: Git, Ubuntu, CentOS, LTSpice, ROS, SvelteKit, Fusion 360, AutoCAD, SolidWorks, Unity
Hardware & Interfaces: Raspberry Pi, Arduino, MSP432, Teensy, i2c, SPI, RS232, UART

EXPERIENCE

Texas Instruments | *Validation Engineering Intern* / Santa Clara, CA   May 2023 – August 2023
- Developed lab methodology to emulate automotive high-speed SerDes cables with a programable Artek Variable ISI channel, reducing SerDes link testing by 50% by eliminating the need to manually switch cables.
- Wrote automation drivers for Keysight PNA S-parameter measurements and Artek Variable ISI Channel controls via GPIB/Serial interfaces.
- Scripted Python class-based programs to setup/automate test benches to validate FPD-Link SerDes link margin.

General Dynamics Mission Systems | *Software Engineering Intern* | Fair Lakes, VA   May 2022 – August 2022
- Implemented automated development of Centos over NFS mount using DHCP and TFTP on a secure network.
- Strengthen system security by hardening kickstarts to comply with DoD STIG requirements and developed Bash/Python script for automating various tasks: input device setup, user permissions, and environment layouts.

InSignEx | *Research Intern* | Gujarat, India (Virtual)   May 2020 – June 2021
- Developed an automated agricultural irrigation system using Python, Flask, and MySQL, for data collection.
- Reduced power consumption of ESP8266 with a shunt resistor to 30mA and presented findings in an IEEE paper.

RESEARCH PROJECTS

Latis | *Co-Developer & Founder* | Blacksburg, VA   November 2022 – Present
- Spearheading the development of a decentralized update platform for actuators. ensuring security and reliability.
- Successfully managing a team of 8 peers in market research and business planning to pitch in front of VCs.
- Built a secure app using SvelteKit for trusted interactions between manufacturers, OEMs, and devices.
- Leveraged Hedera hashgraph, FileCoin IPFS, trusted execution environments, ledgers, and smart contracts.

Collaborative Robotics Lab | *Research Assistant* | Blacksburg, VA   August 2022 – Present
- Collaborating with a Ph.D. student exploring the benefits of deception in achieving higher long-term rewards.
- Using game theory concepts such as Bayesian games to develop and test algorithms using Python.
- Created a user study utilizing Fetch to interact with users based on real-time interactions.

Heart Rate & SpO2 Sensor | *Co-Developer* | Blacksburg, VA   November 2022 – Present
- Filtered raw signal output from red and IR LEDs utilizing op-amps, capacitors, and resistors.
- Created a script to switch between LEDs and compute blood oxygen % and heart rate utilizing non-blocking code.

Haptic Tactics | *Co-Researcher* / Blacksburg, VA   January 2022 – August 2022
- Developed a hand-held proxy to simulate drilling using Unity and HTC Vive Pro for high-fidelity haptic feedback.
- Designed a variable-force closed-loop impedance control system using a BLDC motor, encoder, and Teensy.

RECENT PUBLICATION

S. Sagheb, S. Gandhi, and D. P. Losey, "Should Collaborative Robots be Transparent?," arXiv (Cornell University), Apr. 2023, doi: https://doi.org/10.48550/arxiv.2304.11753.