Soham Gandhi

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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), HackVioliet 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
Hardware & Interfaces: Oscilloscope, VNA, Raspberry Pi, Arduino, Teensy, i2c, SPI, Serial, GPIB

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 time by 60% 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 to reduce setup time by 90%.
- Tested hardware designs utilizing Python scripts to automate testing setups and assist with Verilog chip designs.

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.

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.

16-Bit Central Processing Unit | *Developer* | Blacksburg, VA September 2022 – December 2022
- Developed a 16-bit CPU from the ground up, starting with individual transistors and advancing to larger components, utilizing Verilog for design and implementation.
- Designed and simulated key CPU components, including logic gates, multiplexers, adders, and control units, to achieve a comprehensive understanding of digital logic and computer architecture.
- Successfully implemented the CPU on the Intel De10Lite FPGA board using Quartus and ModelSim

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.