Shreyas Harish

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OBJECTIVE

Electrical Engineering and Physics student with a strong foundation in semiconductor devices, circuit analysis, and hardware testing, seeking an internship in semiconductor process, device, manufacturing, or applications engineering where I can apply hands-on lab experience, data analysis, and physics-based problem solving.

EDUCATION

Virginia Commonwealth University (VCU), Richmond, VA May 2027
Bachelor of Science: Electrical Engineering and Physics
Minor: Mathematics
GPA: 3.8; **Dean's List (Fall 2023 – Present)**

TECHNICAL FOCUS

Semiconductor device physics, fabrication and manufacturing processes, circuit design and analysis, device characterization, process variability analysis, and data-driven engineering optimization.

TECHNICAL SKILLS

Semiconductor & Device Engineering: Semiconductor devices (MOSFETs, BJTs, diodes, LEDs, FinFET fundamentals), device physics, heterostructures, bandgap engineering, I–V and C–V characterization.
Circuit & Hardware Engineering: Analog and digital circuit analysis, PCB-based system debugging, embedded hardware testing, electrical measurements, and validation.
Process & Data Analysis: Process variability analysis, data-driven root cause identification, performance optimization, statistical analysis, and technical documentation.
Tools & Software: MATLAB, Python, LabVIEW, SPICE, Power BI, Linux/UNIX, oscilloscopes, source meters, power supplies, function generators.

ENGINEERING & RESEARCH EXPERIENCE

Research Assistant Intern| VCU College of Engineering| Richmond, VA February 2025 – November 2025

- Conducted research on semiconductor heterostructures, focusing on material behavior, device interfaces, and electrical performance for next-generation electronic devices.
- Assisted in semiconductor device modeling, including analysis of carrier transport, doping effects, and band structure simulation.
- Performed I–V and C–V electrical characterization to evaluate semiconductor device behavior, reliability, and performance trends.
- Developed mechanical CAD designs using Autodesk Inventor for sample holders, probe alignment, and test fixtures supporting electrical measurements.

Engineering Fellowship Intern |VCU Undergraduate Research | Richmond, VA May 2025 - August 2025

- Developed a predictive Ground Control Point (GCP) planning tool using GDOP-based accuracy modeling to optimize GCP quantity and placement for drone-based 3D mapping.
- Integrated flight parameters, camera geometry, and terrain DEM data to automatically generate ArcGIS-ready outputs (KML, shapefiles, feature layers) for improved pre-mission planning.
- Implemented iterative optimization algorithms that reduced field survey requirements and improved mapping accuracy across diverse terrain conditions, from flat to mountainous regions.

Teaching Assistant – Semiconductor/ Circuit Labs | VCU Engineering | Richmond, VA August 2024 - Present

- Guided students through building and debugging electrical systems using measurement tools and structured troubleshooting methods.
- Assisted student in building, testing, and troubleshooting semiconductor circuits, reinforcing theoretical concepts with hands-on practice.

Artificial Intelligence (AI) Security Intern | VCU Project | Richmond, VA August 2024 - January 2025

- Implemented Brute Force Attack and Password Hacking techniques to study cybersecurity vulnerabilities and defense mechanisms.
- Performed adversarial testing with Flipper Zero and custom Python tools to uncover vulnerabilities in inference manipulation and data integrity.

Embedded System Project | VCU Engineering| Richmond, VA January 2025 - May 2025

- Built an autonomous robot using STM32 microcontroller, IR/distance sensors, PWM motor control, and LCD feedback
- Implemented and debugged UART and I²C communication for sensor interfacing and real-time system control.
- Designed a custom PCB motherboard and programmed real-time control logic in C.
- Created AutoCAD schematics documenting chassis layout, sensor placement, and wiring pathways.