Saksham Bansal

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Objective

Junior Electrical Engineering student with hands-on experience in hardware design, digital systems, and embedded electronics, seeking a Summer 2026 Hardware or Silicon Engineering Internship.

Education

Georgia Institute of Technology | Atlanta, GA *August 2023 – Present*
Bachelor of Science in Electrical Engineering; GPA: 3.2 Expected Graduation: May 2027
Relevant Coursework: Analog Electronics, Digital System Design, Circuit Analysis, Computer Networking, Electromagnetics, Microelectronics, Signal Processing, Programming for HW/SW Systems

Skills

Programming & HDL: C, C++, Python, MATLAB/Simulink, VHDL, Verilog
Silicon & Hardware: Digital system design, FPGA development, PCB design, ASIC Verification, ARM/STM32, ESP32, Arduino
EDA & Design Tools: Cadence (Xcelium, Verdi), Altera Quartus II, KiCad, Altium, AutoCAD, NI LabVIEW
Debug & Development: Oscilloscope, logic analyzer, Git/GitHub, Wireshark, technical documentation, Linux
Soft Skills: Technical communication, cross-functional collaboration, problem solving, hardware debugging, time management

Experience

Promaxo Inc. | Oakland, CA *June – August 2025*
Robotics Engineering Intern
Medical robotics startup developing MRI-compatible surgical robotic systems for precision healthcare applications.

- Developed Python models for Pneustep motors, performing 500+ parameter sweeps across pressure, eccentricity, and gear ratios.
- Optimized configurations for MRI-compatible surgical robotic actuators, improving torque-speed-power efficiency by 15%.
- Streamlined data pipeline to visualize performance and generate design insights, accelerating prototype cycles.

Georgia Tech VIP Program | Atlanta, GA *January 2025 – Present*
Undergraduate Research Assistant | Electronic Atrium

- Implemented TCP/IP communication between Arduino nodes and server, reducing packet latency by 10% through optimized C.
- Integrated IMU and ultrasonic sensors, improving motion tracking accuracy by 15% and overall system reliability.
- Processed 3D depth data from Orbbec Gemini E sensors to enhance spatial awareness and mapping.

Georgia Tech School of ECE | Atlanta, GA *January 2026 – Present*
Peer Leader | ECE 1100

- Mentor a cohort of ~15 EE and CMPE students, providing guidance on academic resources, and professional development.
- Lead small-group sessions including structured discussions, resume workshops, elevator pitch activities, and discovery project showcases as part of a 200+ student course.

Projects

Functional Verification - RTL 64-bit Calculator | Silicon Jackets *October 2025*

- Independently owned functional verification of a memory-mapped 64-bit calculator implemented in System Verilog, validating FSM control flow, SRAM read/write protocols, ALU operations, and 64-bit result correctness using a self-checking testbench.
- Executed simulations using Cadence Xcelium and performed waveform-level debugging and coverage analysis with Verdi, identifying corner-case failures and achieving 99.2% functional code coverage.
- Collaborated with RTL and physical design teams to resolve functional issues and enable a clean handoff to a timing-closed GDSII.

SCOMP Memory Peripheral | Digital Design Lab *December 2024*
VHDL-based memory expansion project enhancing SCOMP processor with dedicated memory management and address decoding

- Designed memory peripheral in VHDL to expand capacity from standard configuration to 65,536 16-bit addressable locations.
- Constructed data, address, and mask registers; validated design at 50 MHz with bus integration via IO_WRITE/IO_CYCLE signals.

SoilHawk | ImpactHack *November 2023*

- Developed Arduino-based sensor network (soil moisture, humidity, pH) for real-time field monitoring, boosting irrigation efficiency by 60% with successful deployment on 4-acre test site.
- Ideated a UAV payload with hyperspectral sensors and computer vision model to identify pest infestations earlier than traditional methods, projected to reduce crop loss by 15%.
- Built Python dashboards for real-time visualization, enabling data-driven irrigation decisions.

Leadership

GT IEEE | Vice President & Director of Finance *May 2024 – Present*

- Directed annual $50K budget, strategically allocating funds across technical events and competitions.
- Secured sponsorships and coordinated logistics for RoboTech flagship robotics hackathon, boosting participation to 200+ students.

Autodesk Student Ambassador *August 2025 – Present*

- Delivered Autodesk workshops, enhancing CAD and modeling proficiency among students.
- Partnered with campus engineering organizations to facilitate CAD training sessions and 3D printing demonstrations.