

Tanisha Bobra

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SUMMARY OF QUALIFICATIONS

Electrical & Computer Engineering student with hands-on experience in embedded software development, firmware, real-time control, and hardware-software integration. Proficient in C/C++ and Python for automation, testing, and data analysis, with experience debugging complex systems and improving reliability in embedded environments.

EDUCATION

University of Washington, Seattle WA

Expected Graduation: 2028

Bachelor of Science, Electrical and Computer Engineering

- GPA: **3.77** | Dean's List

Relevant Coursework (through Spring 2026): Digital Circuits (C, C++), Computer Hardware Skills (Arduino, LTSpice, Fusion 360), Signal Processing (MATLAB, Python), Computer Programming (Java)

EXPERIENCE

Electric Vehicle Software Intern, AGS TRANSACT TECHNOLOGIES, Mumbai

June 2023

- Developed embedded Linux software (Raspberry Pi) for EV charging systems, enabling real-time OCPP 1.6 backend communication (JSON/WebSocket)
- Engineered 10+ system-level test workflows, identifying edge-case failures and improving reliability under unstable network conditions
- Verified client-server communication workflows and data integrity across charge-point and backend interactions

Technical Team, E-Truck Challenge, University of Washington

January 2026 - Present

- Implemented real-time radiator fan control over J1939 CAN bus, enabling ON/OFF, reverse, and 25–100% PWM speed control
- Developed DBC and CAPL scripts (Vector CANalyzer) to automate message decoding, test execution, and ECU validation
- Performed debugging and root-cause analysis on integrated CAN + hardware system, resolving signal integrity and communication issues to ensure reliable operation

Mechanical Systems Intern, SANY, Mumbai

April 2023

- Assessed hydraulic and electrical subsystems across 5+ heavy construction machines, analyzing performance for energy-efficiency improvements
- Compiled operational benchmarks and system performance data to support engineering validation and sustainability reporting

PROJECTS

Line-Following Robot, University of Washington

January 2026 - February 2026

- Engineered a 5-channel analog IR sensing system, achieving zero-calibration startup as part of the top 5% of 40+ teams
- Completed full PCB design cycle in KiCad, including schematic capture, component selection from datasheets, and layout for embedded control
- Simulated analog sensing circuits in LTSpice to validate circuit performance and verified signal integrity using oscilloscopes and multimeters
- Developed real-time C++ control algorithm using continuous ADC sampling for stable line tracking

RESEARCH EXPERIENCE

Research Assistant, ITM University Gwalior

June 2023

- Researched and synthesized CZTS nanoparticles to enhance solar cell efficiency for renewable energy applications
- Conducted material characterization, analyzed experimental results, and drafted the abstract and introduction for publication while ensuring accuracy, clarity, and adherence to scientific standards

ADDITIONAL EXPERIENCE

Public Relations, E-Truck Challenge, University of Washington

October 2024 - Present

- Led social media and website management, improving member engagement by 30% and enhancing site usability

SKILLS & INTERESTS

Embedded & Hardware: Arduino, Raspberry Pi OS, CAN Bus, J1939, KiCad, Altium, LTSpice, Fusion 360, PWM, ADC

Software: C/C++, Python (NumPy, Jupyter, Matplotlib, pandas, pytest), Java, MATLAB, Linux, Git, GitHub

Tools: Microsoft Office, Adobe Creative Suite

Languages: English, Hindi, French