HARNEET SINGH BAJWA

Electronics & Communication Engineering Student | Robotics · Software · Intelligent Systems

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PROFILE

Electronics and Communication Engineering undergraduate at Thapar Institute of Engineering and Technology, interested in the intersection of electronics, robotics, software, and machine learning. Builds practical projects spanning digital logic tools and data-driven prediction, with a focus on hardware–software integration and applied engineering.

EDUCATION

B.Tech. — Electronics and Communication Engineering 2025–2029 Expected
Thapar Institute of Engineering and Technology

SELECTED PROJECTS

VERA — Digital Logic & Verilog Platform
Developed a web platform combining Verilog workflows with Boolean-logic minimisation using the Quine–McCluskey method. Built with Next.js and TypeScript, with a C++ engine compiled to WebAssembly and an LLM-powered assistance workflow.

AeroPredict — Air-Quality Prediction
Built a machine-learning project to estimate air quality from environmental measurements. Implemented and evaluated Polynomial Regression, Support Vector Regression, and Random Forest models, with a PySide6 desktop interface for predictions.

ENGINEERING EXPERIENCE

Core Engineer — Mechatronics and Robotics Society (MARS) Aug 2026–Present
Thapar Institute of Engineering and Technology
Contribute to student engineering and robotics activities, with an interest in integrating electronics, sensing, control, mechanical systems, and software.

TECHNICAL SKILLS

Programming: C, C++, Python, JavaScript, TypeScript

Digital Design: Verilog, digital logic, FPGA design fundamentals

Machine Learning: PyTorch, TensorFlow, scikit-learn, model evaluation

Tools: MATLAB, Git, GitHub, Next.js, PySide6, WebAssembly, Vivado

AREAS OF INTEREST

Robotics and autonomous systems · Embedded systems · AI for engineering · Digital hardware · Signal processing · Hardware–software co-design

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Initial draft — review all details, dates, contact information, and project descriptions before publishing.