EDUCATION

Bachelor of Technology
Electronics and Communication Engineering
NIT Hamirpur
2023 – 2027, current

PCM
HPBOSE
2022 – 2023

SKILLS

Libraries & Tools: NumPy, Pandas, Matplotlib, OpenCV, YOLO, scikit-learn

Domains: Machine Learning (from scratch), IoT, Deep learning, Computer Vision, Embedded Systems

Hardware: Raspberry Pi, Arduino, Sensors, Motors

Languages: Python, C, HTML, CSS, JavaScript

CAREER OBJECTIVE

Curious and hands-on B.Tech student at NIT Hamirpur, passionate about combining machine learning with embedded hardware. Focused on building intelligent systems from scratch, exploring real-world applications, and understanding the 'why' behind every concept. Seeking impactful internship opportunities in AI, IoT, robotics, or applied ML domains to contribute meaningfully and grow.

WORK EXPERIENCE

Executive Member
Team Vibhav, **NIT Hamirpur**
Jan 2024 - current

• Pioneered automation builds for 3 club tech projects, enhancing efficiency by 40% through Arduino and sensor systems.

• Mentored 10+ junior members in electronics and embedded systems, boosting their technical skills by 30% over three months.

• Organized 4 hands-on workshops with 100+ participants across departments.

• Drove innovative initiatives that led Team Vibhav to win 'Best Departmental Club' among 15 competitors during Nimbus 2k25.

PROJECTS

Machine Learning from Scratch | ML Developer
– current

• Implemented core algorithms (linear/logistic regression, decision trees, random forests) using Python and NumPy without external ML libraries.

• Achieved 91% accuracy on heart disease dataset; performance matched scikit-learn models within a 3% margin.

• Applied gradient descent, entropy, and regularization techniques for mathematical transparency and optimized learning.

Waste Segregation Bot | Computer Vision + Robotics Engineer
Jan 2025 – Apr 2025

• Developed a YOLOv5-based real-time waste detection system to classify biodegradable vs non-biodegradable materials.

• Deployed system on Raspberry Pi with webcam input and a 4-DOF robotic arm, enabling automated sorting.

• Achieved 85% detection accuracy; reduced manual waste segregation time by 70%.

DIY Air Purifier | Hardware Designer
May 2019 – Feb 2020

• Designed a cost-effective air purifier using ionizer fans, HEPA and activated carbon filters.

• Tested 3 airflow configurations; reduced PM2.5 concentrations by ~40% in a small indoor environment.

• Optimized for use in dorm rooms with total cost under ■1000.