Kalyan Kumar Shrestha

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Summary

Robotics and embedded systems engineer with hands-on experience in UAV design, automation systems, and EV prototyping. Strong foundation in control, electronics, and machine learning. Passionate about advancing robotics R&D while mentoring future engineers.

Education

Thapathali Institute of Engineering, Tribhuvan University — **Kathmandu, Nepal**
Bachelor of Engineering (BE), Electronics, Communication & Information Technology — Dec 2020 – Jul 2025
Percentage: 70.22/100
Relevant Coursework: Advanced Electronics, Control Systems, Communication Systems, Wireless Communication, Computer Networks, Antennas

Professional Experience

Research Assistant — Aerospace Department, Pulchowk Campus — **Kathmandu, Nepal**
Focus: UAV & autonomous systems — Jan 2025 – Present
- Contributed to UAV and autonomous systems research with emphasis on real-time implementation.
- Assisted in flight control design and system integration for experimental aerial robotics.

Electronics Project Lead — Robotics & Automation Center, Thapathali Campus — **Kathmandu, Nepal**
Team leadership, competitions, workshops — Jul 2021 – Apr 2025
- Led teams for Roborace, Robowar, and Robosoccer; mentored juniors and conducted robotics workshops.
- Coordinated design, testing, and documentation for multiple embedded/robotics builds.

Project Engineer — National Innovation Center (E-Cycle Project) — **Kathmandu, Nepal**
Circuit design & system integration — Jan 2022 – Nov 2022
- Designed and integrated circuitry for an electric two-wheeler prototype (power & controls).
- Supported battery management and control system integration; validated via bench tests.

Robotics & Electronics Tutor (Part-Time) — **Kathmandu, Nepal**
Hands-on training across institutions — Aug 2023 – Sep 2024
- Conducted sessions at LOCUS (Pulchowk), RAC, Arniko Intl. College, and municipality schools.
- Delivered modules on robotics, sensors, and embedded systems with practical demos.

Projects & Achievements

Forewarn Disaster Hackathon — **2024**
Built disaster-response system using OpenCV & thermal cameras
- Detected lost people in low-visibility conditions; improved rescue accuracy and response time, securing 1st place in the competition among 50+ participants

International Micromouse Competition — TechFest, IIT Bombay — **Jan 2023**
Autonomous micromouse prototype optimized for maze-solving
- Designed and developed prototype with innovative sensing/control; delivered project on-time.
- Secured 2nd place out of 30+ international teams by creating a cost-effective and innovative solution.

National Young Scientists Conference — **2022**
Presented research on Energy efficient two wheeler systems
- Designed solutions for Energy efficient two wheeler E-vaahan and conducted a feasibility study, enhancing access to cheap and environment friendly mobility system

Certifications

- Machine Learning Specialization — Andrew Ng (Coursera)
- DataCamp Fellowship — Data Science & Applied Analytics
- PCB Design & Fabrication — schematic design, soldering, prototyping

Skills

Programming: Python, C/C++, JavaScript, Node.js

Hardware: Arduino, Raspberry Pi, Jetson Nano, STM32, NodeMCU

Tools: Git, MongoDB, MATLAB, MS Project

Robotics/ML: PyTorch, NumPy, Pandas, scikit-learn, OpenCV

Electronics: PCB design, analog/digital circuits, system integration

Languages/Soft: Nepali, English, Hindi; Teaching, Leadership, Communication