Govinda Bhandari

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Professional Summary

Final-year Electronics, Communication and Information Engineering student specializing in Embedded Systems and Machine Learning-driven engineering solutions. Experience in hardware-software integration using ESP32/Arduino platforms and developing Python-based data processing pipelines for signal and power analysis. Strong interest in intelligent automation, real-time systems, and applied AI for practical engineering problems.

Technical Skills

- **Programming:** Python, C/C++, SQL
- **Machine Learning:** Supervised learning (Regression, Classification), feature extraction, model training workflow
- **Data Tools:** NumPy, Pandas, Jupyter Notebook, CSV data pipelines
- **Embedded Systems:** Arduino, ESP32, ESP32-CAM, sensor integration, PWM/servo control
- **Signal & Power Concepts:** RMS, Power Factor, Phase Angle, FFT concepts, Harmonic and THD analysis
- **Web Development:** HTML, CSS, JavaScript, React
- **Tools:** Git, GitHub, VS Code
- **Cloud Exposure:** AWS fundamentals

Featured Projects

- **AI-Based Smart Power Quality Analyzer with Load Classification**
- Designed waveform-based analysis pipeline using voltage and current time-series data.
- Computed Vrms, Irms, frequency, power factor, phase angle, and Total Harmonic Distortion (THD).
- Extracted harmonic components using FFT concepts for non-linear load detection.
- Built supervised ML classifier to predict load type from engineered electrical features.

- **AI-Based Navigation Assistant for Visually Impaired**
- Developed assistive system using camera input and audio guidance interface.
- Integrated YOLO-based object detection and depth estimation concepts.
- Focused on system reliability and real-time spatial awareness design.

- **Smart Agriculture Bot (Web-Controlled IoT System)**
- Built ESP32-based automation prototype controlled through responsive web interface.
- Implemented real-time actuation logic for field monitoring and device control.

Other Projects

Line Following Robot, Maze Solving Robot, Rescue Rover Bot with FPV (ESP32-CAM), Sensor-based automation prototypes.

Education

Advanced College of Engineering and Management — Kathmandu, Nepal
Bachelor of Engineering (BE) in Electronics, Communication and Information — 2022 – 2026

Certifications

- **Supervised Machine Learning: Regression and Classification** – DeepLearning.AI (Andrew Ng), February 2026
- **Machine Learning on AWS** – AWS Training & Certification, February 09, 2026
- **Fundamentals of Machine Learning and Artificial Intelligence** – AWS Training & Certification, February 09, 2026