

SUPRAV BHATTARAI

📍 Soladevanahalli, Bangalore

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🔗 Suprav Bhattarai

PROFILE INFO

Innovative and Detail-Oriented Mechatronics Engineering student with a solid foundation in embedded systems, automation, robotics, and system integration. Passionate about designing intelligent systems that combine mechanics, electronics, and computing. Eager to contribute to multidisciplinary projects that enhance automation and efficiency in real-world applications while continuously learning and growing in a forward-thinking engineering environment.

EDUCATION

2022-2026

ACHARYA INSTITUTE OF TECHNOLOGY

- BE in Mechatronics Engineering

2020-2022

BUDHANILKANTHA SCHOOL

- Cambridge International AS & A Levels
- Physics, Chemistry, Computer Science, Mathematics, English General Paper

CORE COMPETENCIES AND SKILLS

- Robotics and Automation
- Embedded Systems
- Control Systems
- CAD Design
- System Integration
- Microcontroller Programming
- PLC Programming
- Sensor Integration
- Team Collaboration
- Analytical Thinking
- Time Management
- Communication
- Interdisciplinary Problem-Solving

WORK EXPERIENCE

e-Zone International Pvt. Ltd.

FEB 2024 - APRIL 2024

Python Web Development Intern

- Developed responsive and optimized landing pages to support ad campaigns run by the digital marketing team.
- Conducted UI/UX research to improve user engagement and streamline design elements.
- Collaborated closely with the marketing and design teams to align development goals with campaign strategies.
- Analyzed landing page performance metrics using Google Analytics and presented actionable improvement suggestions.
- Gained hands-on experience in Python-based web frameworks and frontend optimization techniques.

Next Generation Residential Academy

JULY 2022 - SEPT 2022

Teaching Instructor

- Worked with middle and high school students, delivering engaging lessons in science, mathematics, and computer science.
- Fostered critical thinking and problem-solving through hands-on activities and coding exercises.
- Collaborated with faculty to identify learning gaps and implement personalized academic support strategies.
- Played a key role in organizing school-wide academic events, STEM exhibitions, and co-curricular programs, ensuring effective coordination and student participation.
- Provided mentorship and study planning assistance, helping students improve performance and build confidence in technical subjects.

REFERENCES

Garima Adhikari

e-Zone International Pvt. Ltd. /
Head of Marketing

Phone: +977 9808137764

Email: garima.ezone@gmail.com

Nirmala Aryal

Next Generation Residential
Academy / Principal

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TECHNICAL SKILLS

- Programming Languages:
Python, MATLAB, Arduino
- CAD Tools: SolidWorks,
AutoCAD, Fusion 360
- Microcontrollers: Arduino,
ESP32, Raspberry Pi
- Simulation & Analysis: Proteus,
ABB RobotStudio, Simulink
- Industrial Systems: PLC
- Other Tools: ROS (basic), MS
Office

LANGUAGES

- Nepali (Mother tongue)
- English (Fluent)
- Hindi (Intermediate)

PUBLICATIONS

- Dr. Attel Manjunath, Dr.
Manjunatha K N, Dr. R M
Devarajaiah, Suprav Bhattacharai,
Nicholas Vincent Picardo, and
Mohammed Salah Zakaria, "IoT-
Driven Home Automation System:
A Comprehensive Review",
International Journal of
Engineering Research &
Technology (IJERT), vol. 13, no.
3, April 2025. ISSN: 2278-0181.

PROJECT EXPERIENCE

Autonomous Lawn Mower using Raspberry Pi and Camera (Major Project)

- Designed and programmed a robotic lawn mower for automated grass cutting using camera-based color detection and path planning.
- Integrated Raspberry Pi 5 with camera module, GPS, and proximity sensors for navigation and obstacle detection.
- Implemented zig-zag path planning algorithm using Python and OpenCV.
- Utilized battery-powered system with efficient motor control for low-speed precision movement.

IoT-Based Automatic Water Level Controller using ESP32

- Developed an IoT-enabled water-level monitoring and pump-control system using an ESP32, water-level sensor, and relay-driven pump switching.
- Implemented calibrated sensing with automatic pump shutoff when the tank reaches full level, including a lock mechanism to prevent pump restart until the tank becomes empty.
- Integrated real-time water-level monitoring and pump status display via OLED and optional wireless IoT dashboard access through the ESP32's WiFi capability.
- Utilized ESP32's networking features to enable remote monitoring and future expansion for mobile alerts and cloud-based control.

Miniature Home Automation System using Arduino

- Engineered a prototype IoT-enabled home automation system leveraging Arduino Uno as the central microcontroller.
- Integrated sensors (PIR, temperature, LDR) and actuators (relays, LEDs, fans, buzzers) for intelligent environment monitoring and control.
- Implemented serial communication and interrupt-driven routines for real-time device response.
- Designed and programmed automation logic in Arduino IDE for event-based appliance control and safety triggers.
- Utilized Bluetooth/Wi-Fi modules (HC-05/ESP8266) to enable wireless monitoring and remote switching via smartphone interface.

Automated Screenshot Organizer

- Developed a Python-based application to automatically monitor and organize screenshots into structured folders.
- Utilized watchdog.observers and watchdog.events modules for real-time file system monitoring and event handling.
- Implemented custom event handlers to categorize screenshots upon creation, modification, or deletion.
- Enhanced workflow efficiency by reducing manual effort in screenshot management.