

SONY SHRESTHA

Electronics, Communication, and Information Engineer

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SUMMARY

I am an Electronics, Communication, and Information Engineer with research interests in machine learning, robotics, wireless networking, and security. I focus on creating intelligent, autonomous systems by integrating hardware and software for AI-driven, secure real-world applications. My experience includes designing embedded systems, applying machine learning, and conducting research with practical impact.

EDUCATION

Bachelor's in Electronics, Communication, and Information Engineering

National College of Engineering (2019 – 2024)

Tribhuvan University, IOE

Percentage: 73.20% (GPA- 3.68)

High School (+2)

St. Lawrence College (2017 – 2019)

Secondary Education (SEE)

Nepalese Advance Secondary Boarding School

RESEARCH & PROJECTS EXPERIENCE

- **Agriculture Robot Using Image Processing**
 - Built an autonomous robot to detect tomato plant diseases, ripened fruits, and weeds using CNNs.
 - Integrated ESP32 hardware and designed a Flutter mobile app for real-time monitoring.
- Tools/frameworks used: ESP32 Microcontroller, OpenCV, Python, Tensorflow, Flutter
- **Dual Axis Solar Tracking System with Light Automation**
 - Designed and implemented an Arduino-based solar tracker using LDRs and servo motors, achieving more power efficiency than static panels.
- **PID Controlled Self-Balancing Robot with Computer Vision Ability for Remote Surveillance**
 - Built a self-balancing robot using PID control, integrated with a computer vision module for live video surveillance.
- **Gesture Controlled Dinosaur Game**
 - Enabled gesture-based control of the Chrome Dinosaur game using Python, OpenCV, Mediapipe, and PyAutoGUI that captures hand gestures through a webcam and maps them to game controls.

PROFESSIONAL EXPERIENCE

Visiting Lecturer

National College of Management & Technical Science (May 2025 – Present)

- Teach computer science courses (Python programming, Security in Computing).
- Mentor undergraduate students in applied technology projects.

Robotics Instructor

Robotech Nepal (August 2024 – May 2025)

- Delivered hands-on robotics and IoT lessons aligned with STEM education.
- Guided students in competitions, workshops, and innovation projects.

AI Image Annotator (Freelance)

Invisible Technologies (June 2024 – September 2024)

- Annotated and reviewed images for training AI models with high accuracy.
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RESEARCH PAPER

Agriculture Robot Using Image Processing

The International Journal of Educational Practices and Engineering (ISSN 3028-9882)

 [Read Paper](#)

SKILLS

Technical Skills:

- Programming & Tools: Python, C, C++, Arduino IDE, Jupyter Notebook, MATLAB, HTML/CSS
- AI & Machine Learning: CNNs, Computer Vision, Supervised & Unsupervised Learning
- Embedded Systems & IoT: ESP32, Arduino, Sensor Integration, Robotics Platforms
- Databases: MySQL
- Mathematics: Linear Algebra, Probability, Statistics, Calculus

Soft Skills:

Problem Solving | Creativity | Communication | Teamwork & Leadership | Organization | Time Management

CERTIFICATIONS

- Licensed Electronics, Communication, and Information Engineer – Nepal Engineering Council (NEC)
 - GSM Wireless Service Internship – Nepal Telecom
 - IoT, Robotics & Coding – Khudkila Nepal Pvt. Ltd.
 - AWS Fellowship: Cohort 1 – AWS Cloud Club Nepal
 - Data Analytics Essentials – Cisco Networking Academy
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REFERENCES

Er. Suroj Burlakoti

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