

Saju Khakurel

📍 Kathmandu, Nepal ✉️ sajukhakurel9@gmail.com in Saju Khakurel 🔄 sajukhakurel074 ●● Blogs
🔗 Website

🎓 EDUCATION

Bachelor's Degree in Electronics and Communication Engineering 2017 – 2022
Tribhuvan University, Institute of Engineering, Pulchowk Campus, Aggregate: 69.68% Lalitpur, Nepal

Higher Secondary Education (10+2) 2015 – 2017
Kathmandu Bernhardt College, Aggregate: 78.30% Kathmandu, Nepal

👛 PROFESSIONAL EXPERIENCE

Embedded System Engineer (Vehicle Software) 2021/04 – present
Yatri Design Studio Kathmandu, Nepal

- Completed the development of a comprehensive Over-The-Air software project for embedded systems in bikes and charging stations
- Created an internal server for charging stations to optimize functionality
- Programming for a one-wire temperature sensor, handlebar push buttons, OBD Flash, Automatic Driving Assistance System, MMC interfacing

Communication Officer 2023/07 – present
Yatri Energy, Supported by USAID- Urja Nepal Kathmandu, Nepal

- Maintain database of Yatri Energy Public Charging Station Project
- Organize an EV Focus group study program among the EV-concerned authorities and users in Nepal

Intern 2021/12 – 2022/04
Yatri Design Studio Kathmandu, Nepal

- Conducted a research-oriented internship focusing on Over-The-Air programming using C/C++ languages
- Successfully developed a custom bootloader in the STM32 series, enabling the flashing of new application code received through UART

Hardware Designer and Embedded System Programmer 2018 – 2020
Robotics Club, Pulchowk Campus Lalitpur, Nepal

- Contributed to PCB design, fabrication, and testing for the electronics hardware of robots participating in ABU ROBOCON 2019 and 2020
- Coding for rotary encoders, enhancing the robot's path navigation within the game field

Social Media Manager and Content Creator 2021 – 2022
IEEE-Pulchowk Student branch Lalitpur, Nepal

- Facilitated communication across various departments to compile guest lists and distribute event invitations to students, faculty, and external guests
- Developed and executed engaging content strategies for the Facebook page, consistently sharing event updates and news to drive audience engagement and reach

Newsletter Editor 2020/02 – 2020/12
IEEE-Pulchowk Student branch Lalitpur, Nepal

- Responsible for addressing the queries regarding our committee, events, memberships
- Assisted in the conduction of technical events like tech talks and blood donations

Avionics system designer, Team Member 2020/08 – 2020/12
NEAR Aerospace Lalitpur, Nepal

- Contributed to the design and production of data acquisition modules
- Conducted research focused on enhancing control systems for optimized and safe aircraft landings

PROJECTS

Disinfectant Robot

2020/07 – 2021/06

Funded by Nepal Academy of Science and Technology (NAST)

- Contributed to a COVID-19 biomedical research initiative by designing, fabricating, and programming the embedded system for a disinfectant robot.
- Executed PCB design, developing the robot's core infrastructure, and engineered a 2D disinfectant spray mechanism controllable via Bluetooth-enabled mobile app.

Automatic Modulation Classifier using DL

2021/05 – 2022/04

Final Year Project, Pulchowk Campus

- Developed an intelligent system utilizing Deep Learning models to classify modulation types within noisy signals
- Implemented RNN with LSTM architecture and experimented with variations like Bi-LSTM, assessing the impact of attention layers on classification accuracy

Simultaneous Localization And Mapping (SLAM)

2020/11 – 2021/02

- Implementation of tiny SLAM algorithm using turtlebot3 packages provided by ROS and aided by simulating as well as visualizing tools
- Deployed the Particle Filter for optimizing the position of the bot on the map

Hand gesture controlled car

2018/01 – 2018/02

- Motion-controlled miniature vehicle from a distance using a gyro module, Bluetooth, and Arduino

Rockbye Baby

2020/01 – 2020/02

AI powered Smart Cot

- Winner of LOCUS Project Competition - SDG 3 category, LOCUS 2020
- Designed a moisture sensor using a 555 timer

VOLUNTEER AND LEADERSHIP

IEEE Student Branch

2020/02 – 2022/04

Committee Member

- The first batch of committee member
- Organized multiple programs like webinars, blood donations, weekly tech talks

Instructor/Mentor

2019 – 2022

Locus 2019/2020/2022

- Contributed to teaching both fundamental and advanced hardware courses
- Topics covered Breadboarding, Arduino, Soldering, Sensors, Motors, PCB design, fabrication, and programming

Instructor/Mentor

2020/01 – 2020/02

Godawari Residential School

- Mentored middle school students for their science exhibition regarding technical projects conducted by Robotics Club, Pulchowk Campus

SKILLS

C/C++, Python, KICAD, PCB Designing, Robotics, ROS, Embedded Systems

PUBLICATIONS

Book Contribution

- Maharjan, Asim, and Saju Khakurel. "Introduction to IoT." IoT, Machine Learning and Blockchain Technologies for Renewable Energy and Modern Hybrid Power Systems, edited by C. Sharmeela et al., River Publishers, 2022, pp. 1–23