

Saju Khakurel

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

🎓 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

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

Pulchowk Campus

- 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

Godawari, Lalitpur

- 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

COURSES

3rd Nepal Winter School in AI, 2021

2021/12 – 2021/12

Nepal Applied Mathematics and Informatics Institute for Research

AWS Academy Cloud Foundations [5459]

2021/10 – 2021/12

Deep Learning Specialization

2021/08 – 2021/10

RADAR

2021/05 – 2021/08

Pulchowk Campus

- Elective I

Machine Learning by Stanford University

2021/06 – 2021/07