

Saurav Bista

Dhulikhel, Nepal

saurav.bista007@gmail.com | +977-9825340719 | sauravbista007.com.np |
linkedin.com/in/saurav-bista-8768aa187

Education

Kathmandu University (KU), Dhulikhel, Nepal | (Home University) May 2024
B.E. in Electrical and Electronics Engineering (Communication) **CGPA: 3.86/4**

- Graduated at the top of my class in Electrical and Electronics Engineering
- Undergraduate Thesis: *Low-Cost Potentiostat Development for the Detection of Heavy Metal Ions Present in Water*

Indian Institute of Technology (IIT), Hyderabad | (Exchange University) Aug 2023-May 2024
Department of Electrical Engineering **CGPA: 9.17/10**

- Initiated department's first exchange program participation, chosen from 60 peers
- Completed the fourth year of undergraduate coursework and thesis at IIT Hyderabad

Research Experience

Researcher at Academia-Industry Cooperation Kathmandu University (AICKU) Aug 2024 - Present
Supervisor: Prof. Bivek Baral

Analyzing Second-Life EV Batteries for Stationary Energy Storage Applications

- Engineered a Raspberry Pi-based data acquisition system collecting over 5,000+ data points, including voltage, current, and temperature from lithium-ion cells
- Implemented SVM and regression models for SOH and SOC estimation, achieving 85% accuracy

Research Internship at IIT Hyderabad, lab of *Prof. Amit Acharyya* Sept 2023-June 2024
Potentiostat Development for Detection of Heavy Metal Ions

- Devised a potentiostat for Square Wave Voltammetry (SWV), incorporating our algorithm for heavy metal ion detection; validated performance against commercial "Sensit Smart" from Palmsens
- Designed web and mobile applications for water quality parameter visualization

Fellowships and Grants

KU Research, Development and Innovation (RDI) Research Grant 2025-Present

Project: Analyzing Second-life EV batteries for Stationary Energy Storage Applications Amount: \$3000/yr

Korea International Cooperation Agency (KOICA) Incubation Program Grant 2022-2023

Project: Power-Efficient IoT-Enabled Egg Incubator Amount: \$3500

Supervisor: Asst. Prof. Kamal Chapagain

- Developed an IoT-integrated egg incubator with above 90% hatching rate
- Implemented cloud monitoring, automatic egg tilting, and deadband control for optimal efficiency

Projects

Distracted Driver Classification Based on ResNet Deep Learning Architecture 2024

- Compared ResNet9 and ResNet50 models for distracted driver classification, ResNet9 achieving comparable above 90% accuracy despite smaller size
- Implemented image augmentation, improving model performance and generalization

QRS Detection and ECG Signal Analysis for Arrhythmia Using Pan-Tompkins Algorithm 2023

- Implemented Pan-Tompkins algorithm for QRS detection in ECG signals, achieving accurate identification of QRS complexes

- Developed MATLAB application with GUI for ECG analysis, featuring signal loading, parameter adjustment, and visualization

Dual Tone Multiple Frequency (DTMF) Based Home Automation

2022

- Developed a DTMF-based home automation system using MT8870 decoder IC, logic circuits, and relays to remotely control multiple AC appliances without a microcontroller
- Implemented a user-friendly mobile application interface to simplify the operation and control of multiple home devices through DTMF tones

Undergraduate Thesis

Low-Cost Potentiostat Development for Detection of Heavy Metal Ions Present in Water
Research Gate, Thesis for: Undergraduate DOI: 10.13140/RG.2.2.12046.88647

2024

Community Service

Community Outreach and Rural Development - AICKU Research Project

2024-2025

- Led community engagement initiatives in the Kavre district, allocating 20% of research time to address local challenges and foster rural development
- Implemented educational outreach programs, including career counseling and STEM workshops, enhancing local schools' curriculum and student opportunities
- Contributed technical expertise to rural electrification efforts, estimating pole spans for a 5km flood-damaged stretch affected by the October 2024 floods in the Kavre district

KOICA-Funded Incubation Program and Rural Outreach Program

2022-2023

- Secured KOICA grant for the development of a power-efficient egg incubator, leading to outreach programs across multiple districts to educate over 300 local poultry farmers on the technology
- Conducted hands-on workshops demonstrating the egg incubator's 30% energy reduction and 15% improved hatch rate while also training farmers on modern poultry techniques to enhance productivity

Technologies and Other Info

Languages: C++, C, Python, MATLAB, SQL, HTML, CSS

Software: Vivado, Proteus, LTspice, EasyEDA, Packet Tracer, MySQL

Lab: DSP lab, Advanced Embedded Systems and IC Design Laboratory (AESICD) at IITH, Energy Systems Technology and Research Laboratory (ESTRL)

Soft Skills: Cross-functional team management

References

Prof. Ram Kaji Budhathoki, HoD

Department of Electrical and Electronics Engineering
Kathmandu University, Nepal
Email: ram.budhathoki@ku.edu.np

Prof. Bivek Baral

Department of Mechanical Engineering
Kathmandu University, Nepal
Email: bivek@ku.edu.np

Asst. Prof. Kamal Chapagain

Department of Electrical and Electronics Engineering
Kathmandu University, Nepal
Email: kamal.chapagain@ku.edu.np

Prof. Amit Acharyya

Department of Electrical Engineering
IIT Hyderabad, India
Email: amit_acharyya@iith.ac.in