Aayush Jha

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Education

Bachelor of Engineering in Electrical Engineering *April 2022 - Running*
Pulchowk Campus, Institute of Engineering, Tribhuvan University *Lalitpur, Nepal*
Academic Supervisor: Dr. Basanta Kumar Gautam, Ph.D.
Capstone Project: Optimizing Power Grid Resilience with Machine Learning based Risk Assessment

High School June 2018 - June 2020
Model Higher Secondary School,,Janakpur *Janakpur*
Aggregate GPA: 3.56

Experience

Event Manager *March 2023 – May 2024*
PDSC *Pulchowk Campus, Lalitpur*
- Organized Orientation Program
- Organized ETABS Workshop for 4th year Civil Engineering Students.

Tutor (*Hardware Fellowship organized by LOCUS 2024*) *July 2024(7 days)*
Locus *Pulchowk Campus,Lalitpur*
- Worked as Tutor in the Hardware Fellowship conducted by the LOCUS 2024
- Taught there about basics of electronics
- Taught there Arduino Programming

Hardware Intern *January 2022 – April 22*
National Innovation Center *Kritipur,Kathamandu*
- Researched on product development of Heart.
- Created a source code for the Heart Project
- Designed the product in matrix board
- Created an embedded system of the Heart, an educational tool for visually understanding how the heart functions.

Energy Hackathons
Locus *Pulchowk Campus,Lalitpur*
- Participated and reached the final round of 2 Energy Hackathons organized by Locus.
- 2023: Smart Bijuli(Demand Side Management
- 2024: Power Factor Improvement Device (Energy Efficiency)

Projects

Smart Meter using IoT

- Used a traditional Meter and made that digital that shows reading in custom built website using node Js, Arduino and socket programming
- Real time monitoring of the appliances in the household.
- Presented in *LOCUS 2023* in the exhibition

Power Factor Improvement Device (Energy Efficiency)

- Developed a device that can improve the power factor of the industries and commercial building automatically using capacitor banks.
- Developed a website to remotely operate to switch the connection of capacitor and has a admin login page that was built using Node Js and React JS
- Took that in the CodeCamp organized by Locus 2024 and Energy Hackathon.

RoboPoP

- The robot was developed for the competition RoboPop which was organized by LOCUS 2024.
- Nodemcu and Motor Driver were used in to built it and controlled through an app via WiFi.

Ongoing Projects

Optimizing Power Grid Resilience using Machine Learning based Risk Assessment

- Study of the Transient Stability of the Generator in the normal condition
- Study of the Transient Stability of the Generator during the condition when earthquake strikes.
- Used Principle Componenet Analysis using Matlab editor to cluster the data of the Earthquake and different parameters of Generator like Voltage and Torque.

Technical Skills

Electrical Software: *Matlab, Proteus*

Programming Languages: *Python, C/C++, JavaScript, HTML/CSS,*

Packages/ Optimization Tools: *NumPy, Pandas, sklearn, Keras, Matplotlib,*

Machine Learning/ Deep Learning: *Principle Component Analysis , OpenCV for image and audio processing*

Research Tools: *Github*

Awards

People's Choice Award-Locus 2023- Won People's Choice Award in the LOCUS-2023 with my team for the project: *Smart Meter using IoT*