Sandip Poudel

sandippoudel32@gmail.com +977-9846977468 Machhapuchchhre Rural Municipality,Nepal Sandip Poudel

Education

2018 – 2023
Lalitpur, Nepal

Bachelor in Mechanical Engineering
Tribhuvan University, Institute of Engineering, Pulchowk Campus

Major Courses
Fluid Mechanics, Fluid Machines,Material Science, Heat Transfer, Turbomachinery, Vibration Engineering, Theory of Machine and Mechanisms Energy Audit, Finite element Method, Numerical Methods

Professional Experience

2024/02 – 2024/10

Student Energy Fellow
Student Energy (*Remote*)
- Chosen to be a part of the cohort of the 2024 Student Energy Fellowship program
- Learn about energy research, development , strategic planning, energy policy, and finance.

2022/05 – 2022/06

Mechanical Engineer Intern
Heavy Equipment Division,Department of Road, Government of Nepal
- Assisted in conducting comprehensive maintenance procedures for heavy and light vehicles, gaining practical knowledge in diagnosing and resolving mechanical issues.
- Acquired a deep understanding of government procurement and billing procedures, ensuring compliance with regulatory requirements and efficient processing of transactions.
- Developed proficiency in various technical skills, including welding, lathe turning, and operating hydraulic lifts.

2021/11 – 2022/02

Product Development Engineer
Simulation Lab
- Led extensive research on optimizing wing flaps to enhance aerodynamic efficiency in aircraft, contributing to developing more fuel-efficient and high-performance designs.

Research experience

2023/11 – 2024/02

Research Project: Financial Viability of Transitioning into Electric Cooking from LPG in Nepal
- Investigating the economic feasibility and implications of transitioning from LPG to electric cooking methods in Nepal.
- Analyzing cost structures, potential savings, and socio-economic impacts associated with the shift.

2022/06 – 2023/02

Undergraduate researcher
Institute of Engineering, Tribhuvan University
- Designed a cost-effective 3D-printed helical groove for wind turbine blades.
- Conducted field tests validating ANSYS data for turbine performance accuracy.
- Innovated blade integration, optimizing wind energy extraction and turbine efficiency.

Skills

Numerical and Computational
ANSYS,Python, Matlab, C, Fortran,EnergyPlus, PVsyst

Computer Aided Design
SolidWorks, AutoCad

Documentation
MS Office, Latex

Manufacturing skills
Lathe turning, 3D-printing, CNC operation, Welding, Arduino programming

Soft skills
Project Management,Teamwork,Leadership,Communication

Major Projects

2022/05 – 2023/03

Fabrication and testing of Vertical axis Helical Savonius Bach type Wind Turbine to study of its use in water pumping at remote locations
- Conducted in-depth research on various blade profiles for Savonius wind turbines, resulting in the development of an innovative design that ranked among the best performers.
- Implemented the project from conceptualization to fabrication, overseeing the manufacturing of a full-scale wind turbine model, and 3D-printed smaller prototypes for testing purposes.
- Utilized ANSYS simulation software to analyze the turbine's performance, leading to design improvements and validation through comprehensive testing of the fabricated models.

2021/11 – 2022/02

Design and analysis of a concept bike
- Conceptual design was developed using cad software to perform structural and harmonics analysis.

2021/06 – 2021/08

Simulation and Optimization of a Draft Tube for a Francis Turbine at Specified Head and Flow Rate
- Conducted extensive CFD simulations using ANSYS software to evaluate the fluid flow behavior and performance of the draft tube for a Francis Turbine under specific operating conditions.
- Analyzed simulation results to assess pressure distribution, velocity profiles, and energy losses, identifying areas for draft tube optimization and enhanced efficiency.

- Provided valuable insights and recommendations for design improvements, contributing to the overall performance enhancement of the Francis Turbine.

2020/01 – 2020/02 **Automated Color-Based Sorting System Using Conveyor Belt**

- Designed, developed, and implemented an automated color-based sorting system using Arduino microcontrollers and relay switch drivers to control DC motors.
- Integrated a roller-crank mechanism to efficiently sort different colored boxes, showcasing proficiency in electromechanical system design and automation.

Certificates

Certified Energy Auditor
Provided by Centre for Energy Studies

ASSOCIATE-Mechanical Design, ASSOCIATE-Electrical , ASSOCIATE- Additive Manufacturing,ASSOCIATE-Sustainability
Provided by Dassault Systèmes

Certified 3DEXPERIENCE 3D Sculptor - Associate

Certified 3DEXPERIENCE 3D Mold Creator - Associate

A Comparison of AC and DC Power Distribution in the Data Center
Training conducted by Schneider Electric University

Research Methodology Scholar
Provided by Centre for Energy Studies and University Grant Commission

Certified 3DEXPERIENCE 3D Creator - Associate

Certified Mechanical Engineer
Passed the Nepal Engineering Council Examination (NEC)

Poster Presentation

Assesment On Helical Savonius Wind Turbine For Vibration Analysis
Presented in 17th International Conference on Vibration Engineering and Technology of Machinery

Seminars Attended

Energy Systems Engineering Seminar
2023, Lehigh University

Conference on Vibration Engineering and Technology of Machinery (VETOMAC)
2022, IOE Pulchowk Campus

National Mechanical Engineering Seminar
2019, NAST

7 Days Workshop on C Programming
2018,NTBNS

Leadership and volunteering

2023 **Training of Trainers(TOT) for Small Farmers of Nepal**
PUM Netherlands senior experts
Led and managed a comprehensive five-day training program, actively engaging with diverse stakeholders to facilitate seamless collaboration.

2023 **Organizer**
Mechtrix 2023
Successfully organized the Go-Kart event as a part of the Mechtrix Expo, overseeing logistics, participant engagement, and event coordination.

2022 **Mentor**
SolidWorks and ANSYS
Facilitated workshops, troubleshooting sessions, and design competitions to promote hands-on learning and practical application of software tools.

2021 **Organizer**
Zenix 2021
Organized a successful Math-Physics Olympiad for high school students

2020 **Volunteer**
Mechtrix 2020

References

Dr. Tri Ratna Bajracharya, *Professor,* Center for Energy Studies
triratna@ioe.edu.np

Dr. Shree Raj Shakya, *Asso. Professor,* IOE, Pulchowk Campus
shreerajshakya@ioe.edu.np

Dr. Mahesh Chandra Luitel, *Professor,* IOE, Pulchowk Campus
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