

Samir Shrestha

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EDUCATION

Tribhuvan University/ IOE Pulchowk Campus

Nov 2019 - March 2024

Bachelor's Degree in Mechanical Engineering

• **83.51 out of 100**

- Thesis: "Aerodynamic Analysis and Performance Study of Hybrid Wind Turbine With Helical Savonius and H-Type Darrieus Rotor"

RELEVANT COURSES

Fluid Mechanics, Engineering Mathematics, Fundamental of Thermodynamics, Finite Element Method, Mechanics of Solids, Heat Transfer, Numerical Methods, Mechanical Design and Simulation, Applied Mechanics

RESEARCH INTERESTS

Computational Fluid Dynamics, Multi-Phase Flows, Turbulence Modeling, Thermo-fluids, Pumped Liquid Multiphase Cooling

TECHNICAL AND RESEARCH EXPERIENCE

Undergraduate Student Researcher

Jun 2023 – Apr 2024

Supervisor : Laxman Motra, I.O.E. Pulchowk Campus, T.U.

- Analyzed and optimized the performance of the hybrid VAWT through CFD simulations.
- Fabricated a scaled-down prototype of the hybrid VAWT and evaluated the performance through wind tunnel testing under various wind speeds.
- Compared the performance and evaluated optimal design parameters (radius ratio 0.43 at aspect ratio of 0.5) of the hybrid VAWT with savonius and darrieus wind turbines.

PROJECTS

PINN for Predicting Temperature Distribution of Flat Plate

Aug 2024 – Sep 2024

- Developed a Python-based Physics Informed Neural Network model to predict temperature distribution in a flat steel plate with specified boundary conditions.
- Compared PINN results with simulation data to evaluate model performance.

Fabrication of custom CPU case using CNC laser cutter

Oct 2023 – Nov 2023

Supervisor : Arun Bikram Thapa, I.O.E. Pulchowk Campus, T.U.

- Designed custom CPU case design in SolidWorks.
- Manufactured a custom CPU case using CNC laser cutting machine.

Fluid-Structure Interaction Simulation of NACA 2412 wing

May 2023

- Performed Fluid-Structure Interaction (FSI) simulation of a NACA 2412 airfoil using ANSYS software.
- Evaluated and studied lift and drag forces, as well as the deformation and stress distribution of the wing structure.

Fabrication of a wall decor using CNC router cutting machine

Feb 2023

Supervisor : Shashank Dewan, FabLab Nepal

- Created a wall decor piece called "Aankhi Jhyal" using Autodesk Fusion 360, Inkscape, and SolidWorks during my CNC cutter training at Fablab Nepal.

WORK/INTERNSHIP EXPERIENCE

Surya Nepal Pvt. Ltd., Simara, Bara
Mechanical Engineer Intern

Nov 2023 – Dec 2023

- Evaluated and prepared energy assessment reports to identify areas for improvement in energy usage.
- Performed a study on a waste heat recovery from compressors to preheat boiler feedwater, analyzing potential for increased energy efficiency and cost-effectiveness.

TRAININGS AND WORKSHOP

Comprehensive Training on CNC Router Cutting Machine

Feb 2023

FabLab Nepal

- Completed comprehensive training on operation of CNC router cutting machine and its safety precautions.
- Created a wall decor piece called "Aankhi Jhyal" using Autodesk Fusion 360, Inkscape, and SolidWorks as a part of my training.

Hardware Fellowship Workshop

Dec 2019

LOCUS

- Completed a 10-day Arduino workshop for beginners and crash course in electronic hardware design.

EXTRA CURRICULAR ACTIVITIES

7-Day Workshop on Solidworks

Dec 2023

Instructor

- Conducted hands-on training sessions to 37 participants on SolidWorks, covering sketching, solid modeling, and assembly techniques.

Society of Mechanical and Aerospace Engineering Students

Jan 2023

Event Coordinator

- Coordinated e-sports gaming event in Mechanical and Aerospace Engineering Expo conducted by SOMAES.

Maths and Physics Society

Apr 2022 - Aug 2022

General member

- Volunteered to organize and run an Integration Bee program as a general member of a society, promoting interest in solving math problems.

HONORS AND AWARDS

Merit Based Scholarship - Bachelor's in Mechanical Engineering

2019 - 2024

I.O.E. Pulchowk Campus, Tribhuvan University (Full Scholarship)

CERTIFICATIONS

Registered Mechanical Engineer

Oct 2024

Nepal Engineering Council

Certified SOLIDWORKS Associate (CSWA)

Jul 2024

Dassault Systèmes

SOFTWARE PROFICIENCIES

Computational Fluid Dynamics

- ANSYS (Fluent, CFX)

Programming Languages

- Python
- MATLAB
- C

Finite Element Analysis

- Solidworks
- ANSYS

Numerical Modeling

- Python
- MATLAB

3D Modeling

- SolidWorks
- Catia
- AutoCAD

Data Analytics

- Python
- MATLAB
- Excel

Engineering Simulation

- ANSYS
- Solidworks
- Simulink

Others

- Latex
- Microsoft Office