Curriculum Vitae

Dhruba Aryal

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Education

IOE Pulchowk, Tribhuvan University
Bachelor in Mechanical Engineering

St. Xavier's College
High School

Undergraduate Project & Research Experience

- Design of radial impeller in SolidWorks and its flow simulation in Ansys CFX.
- Design and fabrication of a Defect Detection and Sorting Machine using Arduino.
- Design and development of a Bio-Mirrored mechanism similar to the saltatorial motion of Frog.
- Final Year Project: Performance analysis of airfoil using Biomimicry: Serrated trailing edge and Denticle inspired surface**.**
  - 3D modeling of a supercritical airfoil namely NASA SC (2)-0714 and its modified forms that included serrated trailing edge and denticles.
  - Meshing of models in ICEM CFD and their simulation in Ansys Fluent to calculate their lift and drag coefficients as well as acoustic power level.
  - Analysis of the simulation results and their validation against analytical calculations.

Internship

Nepal Academy of Science and Technology (NAST)

- Detailed mechanical modeling of a pyrolysis plant using SolidWorks.
- Ansys simulation for structural and thermal analysis of various parts of pyrolysis plant.
- Breakdown maintenance and replacement of damaged parts based on thorough appraisals.

Additional Experience

National Innovation Center (NIC)
Project: Fabrication of Clay-Pot Making Machine.

- Completed detailed design of clay-pot making machine in SolidWorks.
- Performed structural analysis of the machine and its parts in Ansys.
- Fabricated the machine and tested its operation.

Freelance Mechanical Engineer

- Design of Solar Hut and Roof Trusses for a local metal fabrication company.
- Structural Analysis of Roof Truss in Ansys Workbench.
- Design of Manual Clay Brick Machine.

Real Time Solutions Pvt. Ltd.

- Design of enclosures for embedded systems and their thermal analysis.
- Project Manager: Rainfall Simulator
  Conceptual design, analysis, fabrication, and installation of two rainfall simulators at the Water Resources Research and Development Centre (WRRDC).

Skills

- **Technology:** SolidWorks, AutoCAD, Ansys, FEniCS, deal.II, and Altair HyperWorks
  Programming in Matlab, C, C++, Python, and Mathematica.
- **Workshop Skills:** Lathe Operation, Milling Machine Operation, Welding, Sheet Metal Works, etc.
- **Languages:** Nepali, English, Hindi.