Saugat Ghimire

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Education

- **University of Cincinnati** — Cincinnati, OH
  Master of Science in Aerospace Engineering; GPA: 3.9 — *Aug. 2018 – Present*
- **Institute of Engineering, Pulchowk Campus** — Lalitpur, Nepal
  Bachelor of Engineering in Mechanical Engineering; GPA: 3.8 — *Nov.2012 – July. 2016*

Computer Skills

- **Programming**: Python, MATLAB, C, C++, Bash Scripting, Java
- **Softwares**: Fluent,CFX,OpenFOAM,FINE/Turbo,CATIA,Solidworks,DAKOTA,OpenMDAO

Experience

- **University of Cincinnati** — Cincinnati, OH
  Graduate Research Assistant — *March 2019 - Present*
  - **Design of Unmanned Underwater Vehicles(UUVs) Propulsion System Architecture**: Worked on development of high fidelity UUV propulsor design and optimization system (CFD based) where 8% increase in efficiency was achieved.
  - **Database management**: Currently working to generate and manage the database of propulsors with different optimization goals and implement machine learning to derive the best design.
  - **Turbomachinery Optimization**: Demonstrated propeller design tools for Parametric Geometry Generation; Updated Python and Shell Scripts to link Tblade3,geomturbo,FINE/Turbo and DAKOTA to optimize efficiency and Kinetic Energy distribution on rotors and stators and explored design space to evaluate tradeoffs.
  - **NASA BLI Program**: Worked on preliminary design of tailcone thruster incorporating Boundary Layer Ingestion Inlets (BLI) in collaboration with NASA.
- **United Technical College** — Chitwan, Nepal
  Assistant Lecturer — *Oct 2016 - June 2018*
  - **Teaching**: Taught undergraduate courses on Fluid Mechanics, Thermodynamics, Numerical Methods and CAD.
  - **Research**: Worked on developing and applying mathematical models for the analysis and optimization of thermal systems,CFD analysis of Wind Turbines and Hydraulic Turbines.
- **Agri Professional Consultants** — Kathmandu, Nepal
  Mechanical Engineer — *Jan 2016 - Feb 2018*
  - **Ginger Processing Machine Design**: Worked on Preliminary Design, CAD model generation,CFD study, and optimization of Ginger Washing and Processing Machine.
  - **Cleaning Fan Design**: Designed,performed CFD analysis and Optimized a cleaning fan of a grain processing plant improving the processing capacity by 10% to meet increasing power and output demands.

Academic Projects

- **Application of Machine Learning in CFD**: Used Convolutional Neural Networks to predict the flow around a cylinder achieving 150% improvement in time.The simulation data was generated using OpenLB,an object oriented implementation of Lattice Boltzmann Methods(LBM) and the neural code was written using Keras library.
- **Combustor Design**: Designed an annular type combustor for a military fighter type aircraft.CATIA was used for geometry modeling and Fluent was used to perform CFD analysis.
- **Aerodynamic Shape Optimization** : Aerodynamic Shape Optimization of the Blended Wing Body configuration with active flow control incorporating boundary layer ingestion inlets was performed in MATLAB.

Publications

- **Sanjiv Paudel, Shailendra Rana, Saugat Ghimire, Kshitiz Kumar Subedi, Sudip Bhattrai. Aerodynamic and Stability Analysis of Blended Wing Body Aircraft. International Journal of Mechanical Engineering and Applications. Vol. 4, No. 4, 2016, pp. 143-151.doi: 10.11648/j.ijmea.20160404.12**

Honors and Awards

- **Recipient of Golden Jubilee Scholarship provided by Government of India (Ranked first among 10 selected undergraduate freshmen from whole Nepal)**