

Anil Sapkota

Bisanpur, Itahari-17, Sunsari, Koshi Province, Nepal

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Education

Tribhuvan University, Institute of Engineering, Pulchowk Campus

Lalitpur, Nepal

MASTERS OF SCIENCE IN MECHANICAL SYSTEMS DESIGN AND ENGINEERING

Apr 2018 - Jan 2022

- **Thesis:** Numerical Modelling of Sand Particle Led Erosion in Reverse Engineered Pelton Turbine Bucket

Tribhuvan University, Institute of Engineering, Pulchowk Campus

Lalitpur, Nepal

BACHELORS OF ENGINEERING IN MECHANICAL ENGINEERING

Nov 2012 - May 2017

- **Final Year Project:** Design Study of Runner for Gravitational Water Vortex Power Plant with Conical Basin

Experience

Nepal Engineering College

Bhaktapur, Nepal

LECTURER

May 2019 - Current

- Engaged in research, teaching, and learning endeavours.
- Courses Taught: Technical Drawing, Engineering Mechanics (Statics and Dynamics), Thermal Science, Introduction to Energy Engineering.
- Conducted training sessions on 3D modelling with SolidWorks for robotics student.
- Conducted training sessions on Crystal Ball for optimization, Monte Carlo simulation, predictive modelling, and forecasting.
- Design and fabrication of prototype manual pump for sludge extraction (As a part of 'Towards Brown Gold' - a GCRF, UK project).

Nepal Engineering College

Bhaktapur, Nepal

TEACHING ASSISTANT

Nov 2018 - May 2019

- Engaged in research, teaching, and learning endeavours.
- Courses Taught: Technical Drawing.

Paaila Technology Pvt. Ltd.

Lalitpur, Nepal

MECHANICAL ENGINEER

Aug 2017 - Sep 2017

- Designed and developed 3D model of the prototype food delivery robot 'Ginger' and chat robot 'Pari'.

Centre for Energy Studies, Institute of Engineering

Lalitpur, Nepal

RESEARCH STUDENT

May 2017 - Nov 2018

- Designed, installed and conducted experiments on the prototype Gravitational Water Vortex Hydro-power (a collaboration between Ministry of Energy and Center for Energy Studies).
- Organised RETRUD-18 (a conference jointly organized by Centre for Energy Studies and Alternative Energy Promotion Centre).

Aastha Engineering Solution Pvt. Ltd.

Kathmandu, Nepal

MECHANICAL ENGINEER

Nov 2016 - Apr 2017

- Studied the micro-hydro systems feasible in Terai region of Nepal.
- Designed low-head hydro-power with support from Alternative Energy Promotion Centre, Ministry of Energy.

E & T Pvt. Ltd.

Kathmandu, Nepal

MECHANICAL INTERN

Nov 2015 - Dec 2015

- Received basic training on part design, assembly and surfacing with CATIA v5.
- Received basic training on Particle Method for Computational Fluid Dynamics analysis with in-house R&D software.

Publication

JOURNAL PUBLICATIONS

2022

Bajracharya T R, Shrestha R, Sapkota A, Timilsina A B. Modelling of Hydroabrasive Erosion in Pelton Turbine Injector. *International Journal of Rotating Machinery*.

- 2020 **Bajracharya T R, Shakya S R, Timilsina A B, Dhakal J, Neupane S, Gautam A, Sapkota A.** Effects of Geometrical Parameters in Gravitational Water Vortex Turbines with Conical Basin. *Journal of Renewable Energy*.
- 2020 **Bajracharya T R, Pachhain A K, Sapkota A, Timilsina A B.** Numerical Study on Sediment Erosion of Micro Pelton Turbine Buckets. *International Research Journal of Modernization in Engineering Technology and Science*.

CONFERENCE PUBLICATIONS

- 2022 **Sapkota A, Darlami K, Bajracharya T R, Timilsina A B.** Torque Curve Analysis in Pelton Turbine Bucket Based on Two-Phase Unsteady Flow. *Proceedings of XVII Vibration Engineering & Technology of Machinery Conference (in review)*.
- 2021 **Bajracharya T R, Timilsina A B, Sapkota A, Magar T R, Shrestha S, Sapkota T, Shrestha N.** Effect of Spear Needle Eccentricity on the Pelton Turbine Jet. *Proceedings of IOE Graduate Conference*.
- 2021 **Sapkota A, Gautam A, Timilsina A B, Dhakal S, Shakya S R, Bajracharya T R.** Development of a 1 kW Gravitational Water Vortex Hydropower Plant Prototype. *International Junior Researcher and Engineer Workshop on Hydraulic Structures*.
- 2016 **Gautam A, Sapkota A, Neupane S, Dhakal J, Timilsina A B, Shakya S R.** Study on Effect of Adding Booster Runner in Conical Basin: Gravitational Water Vortex Power Plant: A Numerical and Experimental Approach. *Proceedings of IOE Graduate Conference*.

Program Committees

- 2019 **Co-editor.** Journal of the Institute of Engineering, vol. 15, issue 3: Proceedings of 4th international conference in Renewable Energy Technology for Rural and Urban Development (RETRUD-18). *Kathmandu, Nepal*.
- 2018 **Organizer.** 4th international conference in Renewable Energy Technology for Rural and Urban Development (RETRUD-18). *Kathmandu, Nepal*.
- 2018 **Organizer.** 2nd IOE Robocon. *Kathmandu, Nepal*.
- 2016 **Organizer.** 1st IOE Robocon. *Kathmandu, Nepal*.

Activities

Robotics

MEMBER

2013 - 2017

- Involved in design, 3D modelling, manufacturing, and assembly of robots.
- Participated in ABU Robocon 2013, DaNang, Vietnam
- Participated in ABU Robocon 2014, Pune, India
- Participated in ABU Robocon 2015, Indonesia (Won Best Idea Award and Mabuchi Motor Award)
- Participated in ABU Robocon 2016, Bangkok (Won Best Engineering Award and Panasonic Award)

Chharito Ghar Initiative

VOLUNTEER

2015

- Developed and deployed earthquake relief house "Chharito Ghar" promoted by Pulchowk Campus.

Technical Skills

CAD	CATIA, SolidWorks, AutoCAD, Inventor (Drafting, Part design, Class A surfacing, Assembly, Sheet metal, Point Cloud to CAD conversion, Kinematic analysis)
CFD	ANSYS Fluent, ANSYS CFX, ICEM, PointWise, OpenFOAM (Multiphase modelling, Discrete particle modelling)
Programming	C, Python, MATLAB, π TeX, MS Excel