

**Sanjay Dangi, Mechanical Engineer**  
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EDUCATION	<b>M.S.</b> , Mechanical Engineering (GPA: 3.91/4) (2023 - 2025) Northern Illinois University <b>B.E.</b> , Mechanical Engineering (74/100) Tribhuvan University, Pulchowk Campus, Nepal (2014 - 2018)
TECHNICAL SKILLS	<b>CAD/CAM:</b> SolidWorks, Fusion360, AutoCAD, CNC Coding, GD&T <b>FEA:</b> ANSYS, COMSOL, SolidWorks Simulation, MATLAB <b>Manufacturing:</b> 3D Printing, Lathe, Welding, Milling, Basic PLC, SCADA, Arduino, PIV Laser
PROJECTS	<b>M.S. Thesis</b> , PIV Characterization of a Large-Scale EHD Vortex Confinement Flow in Electrostatic Precipitator for Particle Agglomeration <b>B.E. Thesis</b> , Design and Fabrication of Manually Operated Engine-powered Rice Reaper Machine Using SolidWorks and Ansys as Design Tools with Different Machining Processes
PROFESSIONAL EXPERIENCES	<b>Research Assistant: Northern Illinois University (2023 - Now)</b> <ul style="list-style-type: none"><li>• 3D-CAD Design of Efficient Air Cleaner Electrostatic Precipitator (ESP) Based on Vortex Confinement Flow and Analysis Using PIV Technology</li><li>• Fabrication of the Designed Laboratory Scale ESP Setup</li><li>• High DC Voltage (-25 to -40 kV) Application</li><li>• Vortex Flow Field and Data Analysis in SigmaX and MATLAB</li></ul> <b>Mechanical Engineer/ Plant In-Charge</b> <b>Khilung Kalika Biogas Power Plant, Nepal (2019 - 2022)</b> <ul style="list-style-type: none"><li>• Maintenance of Anaerobic Digester and Decantation Unit</li><li>• Basic Programming and Maintenance of PLC (ABB) and SCADA</li><li>• Supervision of Chemical Scrubbing Unit for Biogas</li><li>• Bio-Gas (1 MW) and Diesel Generators (700 kW), Bio-gas Powered Boiler Unit Handling</li><li>• Granular and Liquid Organic Fertilizer Production Plant Supervision</li><li>• Factory Line Maintenance, Inspection, and Inventory Management</li><li>• Technicians Team Leading and Labor Management</li></ul> <b>Wastewater Treatment: Installation and Operation (2020 - 2022)</b> <ul style="list-style-type: none"><li>• Led the Installation and Testing of a Wastewater Treatment Plant in Collaboration with Bikon Water Treatment Pvt. Ltd.</li><li>• Chemical Treatment of Wastewater from the Decantation Process</li><li>• Lab Results Analysis Before and After Wastewater Treatment</li></ul>

### **Science and Technology Project Instructor**

#### **Rockford Environmental Science Academy (RESA) (2024 - 2025)**

- Taught Students the Fundamentals of 3D Printing and Tinkercad
- Developed and Delivered Hands-on Workshop to Enhance Students' Practical Skills in Design and 3D Printing
- Guided Students Through the Design and Creation of 3D Models
- Designed Tinkercad Tutorial and Organized 3D Design Challenges

#### **INTERNSHIP EXPERIENCES**

##### **TOYOTA, Kathmandu, Nepal**

**(Sept 2017- Dec 2017 )**

- General Servicing and Maintenance of IC engine
- EVs and Batteries fault inspection
- LEAN Concept Basics

##### **Chaudhary Groups, Kathmandu, Nepal**

**(Jan 2018 - Apr 2018)**

- Plant Layout Re-Design
- Maintenance of Noodle and Cheeseball Production Plants, Boilers and Diesel Generators

#### **PODIUM PRESENTATIONS**

**Dangi et al.,(2018)** “Design and Fabrication of Engine Powered Manually Operated Rice Reaper.” RECAST, Tribhuvan University (TU).

**Dangi et al.,(2024)** “PIV Characterization of a Large-Scale EHD Vortex Confinement Flow in Wire-to-Plate Electrostatic Precipitator for Particle Agglomeration”, The American Association for Aerosol Research (AAAR).