Subodh Babu Bhujel

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Education

Miami University — **Oxford, OH**
Master of Science in Mechanical Engineering; GPA: 3.96/4.0 — *Jan 2022-Present*

Tribhuvan University, Institute of Engineering — **Dharan, Nepal**
Bachelor of Engineering (B.E.) in Mechanical Engineering — *Nov 2013- Oct 2018*

Professional Experience

Department of Mechanical and Manufacturing Engineering, Miami University — **Oxford, OH**
Graduate Student Researcher — *Jan 2022-Present*

- **Introduced a novel 9 DOF human upper extremity exoskeleton rehabilitation robot:** Developed a detailed **3D CAD model** and **prototype** of the robot.
- **Manufactured robot's components using CNC Machine:** Produced CAM models from **SolidWorks**, generated toolpaths, and post-processed; and manufactured robot parts in the **HAAS CNC** machines.

Department of Mechanical and Manufacturing Engineering, Miami University — **Oxford, OH**
Graduate Teaching Assistant — *Aug 2022-Present*

- Conducted lab experiments, evaluated lab reports, and graded assignments for the courses: Control of Dynamic Systems, Manufacturing Processes, Mechanical Vibrations, Heat Transfer and Engineering Materials.

Calcgen Nepal (branch of Calcgen Solutions) — **Lalitpur, Nepal**
Mechanical Design Engineer — *Jan 2019-Dec 2021*

- **ASME Code Knowledge:** Successfully led the design process of multiple precision-engineered pressure vessels according to the codes **ASME Section VIII Division 1** and **ASME Section VIII Division 2**.
- **Calculation/ Analysis:** Orchestrated calculation/ analysis using industry-leading software such as **PV Elite** and **COMPRESS.** Performed significant analyses like seismic, wind, lifting lug, and anchoring.
- **3D CAD modeling:** Developed **3D CAD models** of the pressure vessels along with their internal and external attachments using **Autodesk Inventor.**
- **2D Drafting/ Drawing:** Drafted **2D manufacturing drawings** applying the principles of GD&T using **Autodesk AutoCAD** and **Autodesk Inventor** as per the client's requirement. Reviewed fabrication drawings, assembly drawings, and P&IDs.
- **Bill of Materials:** Created detailed **Bills of Materials (BOM)** and sent to the clients for precise cost evaluation.
- **Aboveground Storage Tanks Analysis:** Pioneered the application of specialized **AMEtank** software for API Tank analyses covering roof design, bottom plate design, and shell thickness calculations, and produced accurate **calculation reports.**
- **Shell and Tube Heat Exchangers:** Executed calculation and analysis of **Shell and Tube Heat Exchangers** utilizing PV Elite.
- **FEA Analysis:** Performed static structural **FEA analysis** of complicated parts of pressure vessels utilizing **ANSYS Workbench.**

Technical Skills

• Computer-Aided Design (CAD):	Autodesk Inventor, SolidWorks, CATIA V5, Autodesk AutoCAD
• Computer-Aided Manufacturing (CAM):	SolidWorks, Autodesk HSMWorks
• Finite Element Analysis (FEA):	ANSYS Workbench
• Boiler, Pressure Vessel, and Heat Exchanger:	PV Elite, COMPRESS, HTRI Xchanger Suite
• Tank Analysis:	AMEtank
• Programming and Simulation:	MATLAB, Simulink, LabView, Python, PyTorch
• Prototyping, Machining, and Fabrication:	Vertical Milling machine, CNC Milling machine, CNC Lathe Machine, Lathe, Abrasive Waterjet Machine, Welding, 3D printer
• Other:	Robot Operating System (ROS), Linux, MS Excel, MS Word

Selected Projects

- Vertical Crude Distillation Tower: Performed analysis, CAD modeling, and drafting of a 7-foot diameter and 52-foot tall crude distillation tower for a design pressure of FV/50 psi and design temperature of -20/720°F.
- Fuel Gas Knock-Out Drum: Led ASME calculation, 3D design, and 2D drafting 4 feet diameter skirt-supported 9 feet-tall knock-out drum for the design pressure of FV/150 psi and design temperature of -20/200°F.
- Methanol Storage Tank: Spearheaded API 650 calculation, 3D CAD design, and 2D drafting of 12-foot diameter dome roof tank for 2.5 psi design pressure and -20/120°F.
- Condensate Stabilizer: Performed ASME calculation and created manufacturing drawings of a 7-foot diameter and 66-foot tall vessel for the design pressure of FV/400 psi and design temperature of -20/450°F.

Honors and Awards

- Full tuition waiver for MS in Mechanical Engineering from Miami University. — *Aug 2022- Present*
- International Grant-in-Aid from Miami University. — *Jan 2022-May 2022*
- Summer Research Fellowship from Miami University Graduate School. — *July 2023*
- MetLife Foundation Pathways Scholarship Program (during my Undergraduate studies). — *2015-2018*

Certification

- Certificate for Registered Engineers-Nepal Engineering Council — *2019*