Manisha Aryal

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SUMMARY

PhD student in Mechanical Engineering seeking research positions.

EDUCATION

BACHELOR OF ENGINEERING, MECHANICAL ENGINEERING, PULCHOWK ENGINEERING CAMPUS, **NEPAL,** 2023

Relevant Courses: Theory of Mechanisms and Machines, Finite Element Method, Mechanics of Solids, Applied Thermodynamics and Heat Transfer, Material Science, Manufacturing and Production Process, Control system, System Design and Simulation, Advanced Mechanical Design

PHD, MECHANICAL ENGINEERING, VIRGINIA TECH, AUG 2024-PRESENT

Relevant Courses: Stat in Research, Mechanobiology

SKILLS

- Information Technology: Python, MATLAB, C, HTML, CSS
- Design and Modelling: Ansys Mechanical, SOLIDWORKS, AutoCAD, Image Rendering
- Editing and Graphics: Premiere Pro, Adobe Photoshop, Illustrator
- Problem Solving: Pragmatic and Analytical Approach
- Machine Learning Algorithms: Linear Regression, Logistic Regression, Random Forest, Gradient Boosting, Support Vector Machines

ENGINEERING PROJECTS

TREKKING BATON, ROBOTICS CLUB, 2018

- Developed a multifunctional, foldable hiking stick integrating a torchlight, phone charger, speaker, and electrocutor.
- Designed in SOLIDWORKS, sourced components, and fabricated the prototype.

WATER TREATMENT PLANT PROTOTYPE, 2019

- Designed and built a working model of a water treatment plant and awarded Best "Thematic" Design at the Mechanical Engineering Expo 2019.
- Developed key components, including a magnetic stirrer for flocculation, copper-alum for coagulation, a gravity-based sedimentation tank, and a multi-layer filtration system with sand, pebbles, and charcoal.

3D MODEL OF MASK SHREDDER, 2020

- Model of mask shredder that would shred the masks remove the aluminum strip and segregate it from the fibers, then sanitize those fibers.
- Designed such that it would take used pieces of mask, process them to output the sanitized mask fibers and aluminum strips separately.

DESIGN AND ANALYSIS OF ELECTRIC VEHICLE CHASSIS FRAME, 2022-2023

- Designed an innovative chassis frame for electric vehicles, optimizing for strength and material efficiency.

- Applied Prismatic Beam Theory for frame selection, FEM for structural analysis, and Ashby charts for material selection.

EXPERIENCE

TEACHING ASSISTANT, ME2004, VT, FALL 2024

- Conducted office hours and weekly recitations for 40 students, providing academic support and grading assignments.

DESIGN ENGINEER, MANTRA INCORPORATION, 2023-2024

- Designed gym equipment using SOLIDWORKS for safety, durability, and adaptability, and created detailed manufacturing drawings.
- Supported manufacturing and installation processes, ensuring product specifications and quality.
- Handled the creation of the Bill of Materials (BOM) and Bill of Quantities (BOQ) for procurement and project execution.
- Installed Boltek lightning detectors at Bernhardt College for research purposes.

SERVICE ADVISOR AND TECHNICIAN (INTERN), HYUNDAI AUTOMOBILES,2023

- Diagnosed automotive issues and coordinated repairs with technicians.
- Gained hands-on experience in engine oil changes, brake pad replacements, engine assembly, and other mechanical tasks.

ROBOTICS CLUB MEMBER, PULCHOWK CAMPUS, 2018-2020

- Acquired skills for operating machining tools, including lathe machines, milling machines, laser cutter, and 3D printer.
- Contributed to the Nepal team's entry in ABU Robocon 2019 by designing robot parts in SOLIDWORKS, fabricating custom components, and assembling the robot based on the competition's theme "Sharing the knowledge".

CERTIFICATION

CERTIFIED SOLIDWORKS ASSOCIATE (CSWA), November 2023

- Obtained proficiency in 3D modeling and engineering design using SOLIDWORKS.