

Subodh Chandra Subedi

Madison, WI

scsubedi@wisc.edu

<https://linkedin.com/in/subodhscs>

<https://subodhscs.github.io>

PhD Candidate in Mechanical Engineering with a strong background in product design, manufacturing, CAD, FEA, and design optimization. Experienced in DFM, failure analysis, design optimization, GD&T, and Solid modeling. Worked as course instructor for machine component design, computer aided engineering for undergraduate students. Industry experience involves design, manufacturing, installation and testing of heavy equipment in the energy industry.

EDUCATION

PhD In Mechanical Engineering

University of Wisconsin-Madison

Thesis: Support structure optimization for LPBF metal AM.

08/2024

GPA: 3.71

MS In Mechanical Engineering

University of Wisconsin-Madison

08/2020

GPA: 3.71

ENGINEERING EXPERIENCE

Research Assistant (Jan 2019 - Present)

UW-Madison, WI

Engineering Representations and Simulation Lab, UW Madison

Alloy Design and Development Lab, UW-Madison

Support Structure Optimization for Metal Additive Manufacturing

- Designed novel truss-type support structure for metal additive manufacturing.
- Optimized the support for better performance and reduction of material waste by over 80%.
- Innovative computational support optimization solutions delivered to the US Army and US NAVY

Formula 1 Upright Design Challenge, Topology Optimization Roundtable 2019, NM, USA

- Designed and manufactured car upright with 90% less weight for a given multi-load problem using topology optimization and additive manufacturing.

3D printed Tactile Maps for Visually Impaired

- Created tactile maps of campus for easy navigation, orientation, and mobility for visually impaired individuals.

In-process Failure Investigation in Ceramic 3D Printing

- Modelled ceramic 3D printing build process to predict part build failures using computational and experimental tools

Teaching Assistant

UW-Madison, WI

ME 342 (**Machine Component Design**) (May 2024 – August 2024)

- Failure theories, Safety factor, reliability analysis, high cycle fatigue
- Body and surface stresses, failure rates of components based on property and load distribution.

ME 331 (**Computer-Aided Engineering**) (Jan 2024 – May 2024)

- Restructured the course to include FEA, shape, size and topology optimization
- Teach GD&T, advanced modelling, analysis, and optimization using SolidWorks, MATLAB

ME 548 (**Intro to Design Optimization**)

- Design optimization course using MATLAB, SolidLab

Teaching Assistant (Aug 2015 – Nov 2017)

University of North Dakota, ND

- Designed FSAE cars suspension with optimized anti-sway bars using ANSYS
- Design a notification system for navigation and mobility for visually impaired individuals using personalized audio signals

Mechanical Engineer (Dec 2012 – Aug 2015)

Nepal Hydro & Electric Limited, Nepal

- Designed, manufactured, and tested hydro-mechanical steel structures
- Performed Project and Contract management.
- Carried out Engineering Feasibility Studies
- Trained engineering staffs on using AutoCAD, CNC Plasma Cutter

LEADERSHIP/VOLUNTEERING EXPERIENCE

- Designed and led 10-day workshop titled 'Introduction to Computer-Aided Engineering' for middle and high school students, August 2018, UW-Madison
- Led a 1-day workshop titled 'Learning Topology Optimization through Examples and Case Studies' at ASME IDETC-CIE Conference, August 2019, Anaheim, CA
- Judge – Capital Science and Engineering Fair, Madison, WI, 2019, 2022, 2023, 2024
- Morgridge Entrepreneurial Bootcamp, UW-Madison 2023

SKILLS

- Programming and Simulation Languages: MATLAB, Python
- Design, Modeling and Optimization: SolidWorks, ANSYS, CREO, Rhino, nTopology, Abaqus, NX,
- Additive Manufacturing Tools: Cura, Materialize Magics, EOS M290, Ultimaker