

Mandy Rosengren

Experienced, organized mechanical engineer with a background in additive manufacturing and smart clothing. In possession of strong communication and leadership skills as past president of the Tufts University's campus wide bike share and as founder of the Wearable Tech Station and Wearable Tech Week at the Nolop Makerspace.

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Portfolio: <https://www.mandyrosengren.com>

EDUCATION

Tufts University, Medford MA

Bachelor of Science in Mechanical Engineering, *magna cum laude*, May 2020

Recipient of The George H. and Marion E. Gowdy Prize for Mechanical Engineering, 2019

Chosen applicant to attend weeklong wearable tech workshop in Germany, 2019

GPA: 3.72, Dean's List (All Semesters)

WORK EXPERIENCE

Stryker, AO Additive Technology Applications Intern, May 2019 - August 2019

Designing, Analyzing: redesigned biomedical products for additive manufacturing for a robotic arm, for a Spinal project and a Trauma and Extremities instrument (creating 20 iterations of designs) through the addition of lattices for light weighting, topology optimization and 3D modeling; developed workflows for FEA testing of lattice structures throughout multiple design softwares and developed a lattice structure library from the FEA analysis with SolidWorks, Creo, Ansys and nTop Platform

Prototyping: prepared parts for additive manufacturing using Materialise Magics; printed prototypes on LRM printers; prepared LRM printed parts (removing supports, heat treating and sandblasting)

Teaching, Collaborating, Communicating: taught workshop for R&D on DfAM; created documentation and tutorials for additive design; communicated with clients implementing their needs and requirements in designs; presented updates at weekly meetings and a final PowerPoint presentation for Additive Team

Bray Labs, Tufts University, Shop Assistant, June 2018 - May 2020

Designing, Prototyping: designed 10+ projects for the shop to demonstrate the capabilities of our tools; improved signage and videos with Adobe Photoshop, Illustrator, InDesign and Premiere; assembled new machines and supplies for the shop; completed metal fabrication for projects for professors and students

Teaching, Communicating: trained students on equipment (3D printers, CNC router, band saws, drill presses, desktop mill, jump shear, solder and hand drills) in the shop; developed documentation for the CNC Router and other machines; advised students with their personal or school projects on fabrication and design; trained students in labs in metal casting, foam/cardboard prototyping, and sketching

Mechanical Engineering Senior Design Course, Tufts University, Course Assistant, Sept. 2020 - Present

Teaching, Communicating: maintain Canvas page with instructor; lead office hours; advise students with project and assignments; grades assignments for 25 students

PROJECTS

Cupcycle, Senior Design Project, September 2019 - December 2019

Brainstorming, Designing, Collaboration, Prototyping: invented device to convert single-use coffee cups into coasters; sketched designs; met with potential customers; developed three iterations of the design through 3D printing, woodworking, laser cutting, and metalworking; created a working prototype

100 Days of Making, July 2020 - October 2020

Designing, Coding: created 65 designs in modeling, surfacing, latticing, topology optimization and coding with SolidWorks, Blender, nPower Software, nTopology Platform, Autodesk Meshmixer, JavaScript and HTML

TECHNICAL SKILLS

Computer Aided Design: SolidWorks, Creo, nTop Platform, Element, Power Surfacing, PTC, Inventor, Revit, AutoCAD

Coding Languages: MATLAB, Arduino, Python, HTML/CSS, JavaScript, C++ (Basic)

Software: Ansys, Materialise Magics, ArcGIS, Photoshop, Illustrator, InDesign, Mathcad, Microsoft Office

Equipment: FDM and SLA 3D Printers, CNC Router, Laser Cutter, Horizontal and Vertical Band Saws, Drill Press, Jump Shear, Beverly Shear, Belt Sander, Grinder, Soldering Iron, Welding, Sewing Machine

GENERAL SKILLS

Adaptability, Time Management, Leadership, Communication, Teamwork and Collaboration, Problem-Solving, Creativity, Ability to Wear Multiple Hats, Mechanical, Design, FEA Analysis, Topology Optimization, Prototyping