

ALESSANDRO TASSO

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EDUCATION

University of Southern California, Viterbi School of Engineering

Los Angeles, CA

Master of Science in Mechanical Engineering

May 2026

Bachelor of Science in Biomedical Engineering (Mechanical Emphasis)

May 2025

- Relevant Coursework: Computer-Aided Design for Biomedical Devices, Regulation of Medical Devices, Orthopedic Biomechanics, Biomedical Computer Simulation Methods, Statics, Dynamics, Strength of Materials, Thermodynamics

SKILLS AND CERTIFICATIONS

- Certifications & Honors: SolidWorks CAD Design Associate (CSWA), Viterbi Dean's List: Fall 2021 & 2023, Spring 2022 & 2024
- Skills: AutoCAD / SolidWorks / PTC Creo / Microsoft Office Suite / MATLAB / MAP Agile / Arduino / Minitab / Potentiometry / Fixture Design / 3D Fabrication / Instron Testing / CNC Machining / PTC Windchill / Rapid Prototyping / DOE

EXPERIENCE

Medtronic

Lafayette, CO

R&D Engineering Summer Intern, Surgical Robotics

Jun 2025-Aug 2025

- Investigated & mechanically characterized glass-filled PEEK PTFE composites for Hugo RAS instrumentation components, designed rotary-Instron test fixtures in SolidWorks, and leveraged DOE & Minitab to quantify friction and wear performance
 - Quantified kinematic backlash in Hugo RAS System instrumentation via precision displacement protocols feeding Monte Carlo tolerance-stack simulations; Executed rotary-Instron fatigue and ultimate-failure tests on redesigned jaw inserts, performed fracture-surface characterization with Keyence VHX microscopy, and delivered technical reports
- Skills:** SolidWorks, PTC Creo & Windchill, Minitab, Instron Testing, 3D Prototyping, DOE, VHX Microscopy, Fixture Design

USC Laboratory for Design of Medical and Analytical Devices

Los Angeles, CA

Undergraduate Researcher

Aug 2022-May 2025

- Engineered wearable electrochemical sensors for maternal-infant health, including a glucose-monitoring nursing bra pad (96.8–104.1% accuracy across lactation stages) and a point-of-care theophylline sensor (6.5 μ M detection limit)
 - Fabricated 150+ LIG electrodes with 14+ day stability and validated performance in 100+ human milk samples, confirming a 0.5–5 mM linear detection range and high selectivity against interferences
 - Published "*Mom and Baby Wellness with a Smart Lactation Pad: A Wearable Sensor-Embedded Lactation Pad for On-Body Quantification of Glucose in Breast Milk*" detailing findings
 - Co-authored "*A Point-of-Care Device for Theophylline Quantification in Human Milk Using Laser-Induced Graphene Electrodes*"
- Skills:** Device Prototyping / Design, Potentiometry, Laser Ablation, 3D Printing / Microfabrication, Data Analysis (MATLAB)

Medtronic

Lafayette, CO

R&D Engineering Summer Intern, RPM Test Hardware

Jun 2024-Aug 2024

- Completed design verification to measure navigational position accuracy of SpineAir surgical reference frames on S8 Stealthstation and O-Arm with a precision of 1.27mm and 2.26mm, respectively
 - Conducted a comparative analysis of reprocessed vs. new AQM device performance and used Minitab to compute statistical differences in highlighted functional product requirements mathematically
- Skills:** SolidWorks, PTC Creo & Windchill, Minitab, MAP Agile, Instron Testing, CNC Machining, 3D printing, FMEA, DOE

Medtronic

Lafayette, CO

Engineering Summer Intern, Sterilization & Operations

Jun 2023-Aug 2023

- Led a 750+ sample study in collaboration with the Medtronic North Haven lab, validating a 7-day post-sterilization sterility assurance and EO cycle compliance with data analysis of key parameters such as chamber temperature and pressure
 - Authored a 30+ page parametric release validation report for Steritech Cycle 415 in line with ISO 11135, supporting validation approval with analysis of 70+ sterilization cycle datasets, and presented key findings to Enabling Technologies OU
- Skills:** Microsoft Excel, MAP Agile, Project Management, Quality Management Systems (QMS), Minitab

EXTRACURRICULAR ACTIVITIES & PROJECTS

ASBME Make-a-Thon

Los Angeles, CA

Competitor, Mentor, Make-a-Thon Technical Lead, Executive Board Member

Feb 2022 & Feb 2023

- Oversaw power tool operations, contributing over 30 hours of direct technical assistance to participating teams
 - Utilized SolidWorks, AutoCAD, and 3D printing to prototype a chassis for a walking cane with object detection functionality
- Skills:** AutoCAD, MATLAB, 3D Printing, Soldering, Prototyping, Shop Tools & Machinery

HOBBIES AND INTERESTS

Bouldering/Rock Climbing, Hiking, Camping, Pottery, Golf, Guitar, Surfing, Snowboarding, Woodworking, Photography, Soccer