ALESSANDRO TASSO

Los Angeles,CA | (510) 813-0231 | alessandrotasso2021@gmail.com | www.linkedin.com/in/alessandro-tasso/

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, Advanced Mechanical Design, Linear Algebra, Statistical Methods in Biomedical Engineering

SKILLS

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 / Soldering / Device Prototyping & Design

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, conducted fracture-surface characterization with VHX microscopy
- Collaborated with cross-functional engineers to present findings in technical reports, building experience in analytical method development and data-driven decision making

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 and validated wearable electrochemical biosensors for maternal–infant health, integrating enzyme kinetics, cyclic voltammetry, and potentiometry into a smart lactation pad (96.8–104.1% accuracy)
- Fabricated 150+ laser-induced graphene electrodes, ensuring stability over 14+ days, applying rapid prototyping, microfabrication, and materials characterization relevant to biologics and assay platforms
- Analyzed 100+ human milk samples using MATLAB for quantitative data analysis and gaining experience in biological assay development, protein quantification, and data reproducibility
- 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**

- Verified performance accuracy of SpineAir surgical reference frames on Stealthstation and O-Arm imaging platforms, achieving sub-millimeter precision; applied process validation techniques and analytical troubleshooting
- Designed mechanical fixtures for torque and clamp testing, strengthening hands-on prototyping, rapid iteration, and root cause analysis experience
- Performed statistical comparison of reprocessed vs. new devices using Minitab, FMEA, and DOE, honing skills in data integrity, process improvement, and compliance testing

  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 validation study in collaboration with quality teams to confirm EO sterilization cycle compliance; applied biological safety standards (ISO 11135) and quality management principles
- Authored a 30+ page technical validation report summarizing sterilization kinetics, chamber pressure/temperature control, and parametric release compliance, reinforcing technical writing, GMP awareness, and regulatory documentation skills
- Partnered with cross-site collaborators, developing team-based communication and project management skills critical for process development

  Skills: Microsoft Excel, MAP Agile, Project Management, Quality Management Systems (QMS), Minitab

LEADERSHIP AND INVOLVEMENT

Associated Students of Biomedical Engineering Los Angeles, CA

Community Chair, Corporate Chair **Aug 2023-May 2025**

- Coordinated meetings with 16 board members to plan and maximize student internship, research, and academic opportunities
- Planned & Executed 100+ flagship events: Makeathon, BIOMED Research Symposium, Fall Networking Night, Corporate Dinner
- Taught hands-on STEM lessons for 10+ weekly sessions, introducing students to BME concepts through ASBME Project-in-a-Box

  Skills: Leadership, Group Work, Event Planning, Budget Management

EXTRACURRICULAR ACTIVITIES & PROJECTS

ASBME Make-a-Thon Los Angeles, CA

Make-a-Thon Technical Lead, Executive Board Member **Feb 2023 & Feb 2024**

- Oversaw power tool operations, contributing 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
- Directed logistics, managing a $16,000 budget, venue coordination, catering, and prototyping resources.

Skills: AutoCAD, MATLAB, 3D Printing, Soldering, Prototyping, Shop Tools & Machinery

ASBME Make-a-Thon Los Angeles, CA

Team Member, ArCane **Feb 2022**

- Participated in Makeathon competition, prototyping object & fall detection cane under time and material constraints to aid in fall detection with geriatric patients
- Utilized SolidWorks, AutoCAD, and 3D printing to prototype chassis and circuitry for walking cane with object detection functionality.

  Skills: SolidWorks, AutoCAD, 3D Printing, Soldering, Shop Tools & Machinery

AWARDS & CERTIFICATIONS

Viterbi Grand Challenges Scholars Program (GCSP) Designation *May 2025*
NAE-recognized honor awarded to USC Viterbi undergraduates for integrating research, entrepreneurship, multicultural, and socially conscious experiences to address global challenges.

BMES Outstanding Outreach Program Award Aug 2024
National award issued to the Associated Students of Biomedical Engineering at USC for our outstanding leadership in community outreach, service, and STEM volunteerism. This award was given to the organization for the work completed in my time as Corporate Chair.

SolidWorks CAD Design Associate (CSWA) Aug 2024
Certified SolidWorks Associate, showcasing advanced proficiency in 3D CAD modeling, design automation, and simulation, with a focus on creating efficient, complex mechanical designs. Earned through a 3-hour virtual test.

BMES Commendable Achievement Award Oct 2023
National award issued to the Associated Students of Biomedical Engineering at USC for our excellent programming, student opportunities, and outreach efforts to the South LA community. This award was given to the organization for the work completed in my time as Community Chair.

Outstanding Student Organization May 2023
Presented by USC Viterbi to ASBME (Associated Students of Biomedical Engineering) for outstanding service to the engineering student body and school community. Earned during my time as Community Chair.

Viterbi Dean's List Fall 2021, Spring 2022, Fall 2023, Spring 2024
Achieved academic recognition for maintaining a GPA in the top 5% of the Viterbi School of Engineering, demonstrating consistent excellence in engineering coursework and overall academic performance.