Vittorio Martinet

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PROFESSIONAL EXPERIENCE

Mechanical Engineer Consultant | OpenBCI | Brooklyn, NY — May 2024 – Present

- Provided "design for manufacturing" guidance, reducing part count and improving manufacturing ease and speed
- Implemented batch manufacturing techniques, halving assembly time of the Galea Biosensing Headset
- Designed and 3D printed assembly fixturing
- Produced molded foam and silicone components for the Galea Biosensing Headset
- Implemented quality control procedures for incoming headset components
- Produced manufacturing process documentation and trained assembly technicians

Mechanical Engineer II | Triple Ring Technologies | Newark, CA — September 2021 – Present

Specialized Operating Room Tissue Oximeters, Multiple Configurations (Sep 2021 - Present)

- Designed biocompatible, water resistant, injection molded electronics/sensor enclosures for an operating room tissue oximeter
- Conducted long term testing of tissue oximeter performance, resulting in a rated lifespan increase from 25 to 100 uses
- Designed a a medical grade cable including a strain relieving overmold
- Tested the mechanical integrity of an optical fiber interface to determine failure modes and proposed more reliable interfaces
- Performed a human trial comparing multiple configurations of a tissue oximeter on subjects with varied melanin types
- Redesigned the sheet metal latch of an existing medical device container to improve opening and closing "feel"
- Wrote manufacturing process instructions for multiple tissue oximeter devices

Stomach Residing Wireless Smart Pill - DARPA/MIT Sponsored (Apr 2022 - Feb 2024)

- Designed, built and tested working prototypes of an injection molded smart-pill which remains resident in the stomach and releases medication or disassembles based on wireless smartphone inputs
- Miniaturized the smart pill prototype to match FDA approved dimensions in preparation for animal & human trials
- Developed a Python program and simple user interface for live graphing of sensor data

Veterinary Blood Chemistry Analyser (Oct 2021 and Nov 2022)

- Conducted multi-point thermal testing of temperature sensitive areas of a blood analysis device and analyzed the data
- Performed mechanical simulations of metal snap features using Abaqus

Cardiac Bypass Surgery Hemostatic Seal Device (Oct 2021 - Apr 2022)

- Designed and built prototypes of a hemostatic seal device using Nitinol and silicone films
- Designed and built a simulated artery to evaluate hemostatic seal prototype functionality

General

- Provided mechanical engineering consulting services to over 10 medical device companies
- Used SolidWorks and Fusion 360 to design 3D printed, machined, sheet metal, and injection molded mechanical components
- Produced geometric dimensioning and tolerancing (GD&T) drawings using SolidWorks
- Used Abaqus and COMSOL to perform mechanical stress and deformation simulations
- Created worst case and root sum squared tolerance stack analyses to ensure proper fit between mating mechanical components
- Created bills of material, cost analyses, and inventory trackers for mechanical assemblies
- Researched and provided material and adhesive recommendations for various projects
- Acted as calibration lead, improving engineers' productivity by keeping equipment calibration up to date

Mechanical Engineer Intern | Sandia National Laboratories | Livermore, CA — June 2020 – September 2020

- Designed and prototyped an electronic lockout safety system to prevent optical test engine damage
- Developed MATLAB computer vision code to better measure the distance between a diesel fuel injection nozzle and the first appearance of the flame (known as the "lift-off length")

Mechanical Engineer Intern | Pacific Earthquake Engineering Research Center | Richmond, CA — July 2018 – September 2019

- Calibrated and mounted precision sensors onto test specimens to collect displacement and acceleration data
- Performed compression tests on reinforced concrete walls using a 4-million-pound hydraulic press
- Fabricated custom steel adapters to secure industrial equipment to earthquake simulation platform

EDUCATION

Bachelor of Science in Mechanical Engineering — June 2021

University of California, Davis — Major GPA: 3.9/4.0

SKILLS

3D modeling and GD&T drawings (SolidWorks, Fusion 360), mechanical stress simulations (COMSOL and Abaqus), design for manufacturing (3D printing, machining, injection molding, sheet metal), tolerance stack analysis, bill of materials/inventory tracker creation and maintenance, rapid prototyping and iterative design, MATLAB, basic programming in C++, Python, Java, mechatronics, machine learning, engineering documentation (test protocols, manufacturing process instructions, design reviews), Windchill PDM