Vittorio Martinet

Brooklyn, NY | vittoriocm@gmail.com | linkedin.com/in/vmartinet

PROFESSIONAL EXPERIENCE

Mechanical Engineer II September 2021 – Present

Triple Ring Technologies, Newark, CA

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

- Conducted long term testing of tissue oximeter performance, resulting in a rated lifespan increase from 25 to 100 uses
- Designed a biocompatible, water resistant, injection molded electronics housing with sliding battery door
- Designed a two-shot injection molded sensor housing and printed circuit board footprint for a miniature tissue oximeter sensor
- 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

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

Laser Welder (Aug 2023 - Sep 2023)

- Designed an optical breadboard with custom brackets to couple the input and output fibers of a 12kW laser

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

Microplastics Filter for Ocean Water Studies - EPA Sponsored (Dec 2021 - Jan 2022)

- Designed a pump assembly with tiered filters to collect microplastics from sea water

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 June 2020 – September 2020

Sandia National Laboratories, Livermore, CA

- 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 July 2018 – September 2019

University of California Berkeley Pacific Earthquake Engineering Research Center, Richmond, CA

- 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