RIA DESAI

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EXPERIENCE

Edwards Lifesciences R&D Intern

Edwards Lifesciences

June 2021- August 2021 Irvine, CA

- Designed and prototyped a complex internal mechanism for a future concept handle allowing greater maneuverability for the SAPIEN M3, a mitral valve replacement, delivery system after thoroughly understanding mitral valve anatomy
- Collaborated with key stakeholders to brainstorm and implement ways to solve MFG pain points in the nose fin region of the SAPIEN M3 device after initiating my own robust experimental design to test the functioning of the original design
- Utilized CREO and Solidworks to develop drawn out prototypes into 3D printed prototypes which were incorporated into the commercial configuration

TAVI Delivery Device Manufacturing Intern

Straight Access Technologies (SAT)

Aug 2020 - Dec 2020 Online

- Aided in the development and research of a non occlusive, self homing, trans-apical delivery device for SAT's expandable aortic valve system designed to help rheumatic and degenerative patients
- Designed and manufactured sleeve cutting rig to precisely cut dilatation balloon polyisoprene sleeves to size

Artificial Intelligence/Machine Learning Intern

Databound Solutions Inc

June 2020 – Aug 2020 Ithaca, NY

- Created SQL queries in order to pull out pertinent information about the usage of Databound's primary product, EMUE
- Predicted changes in the client's use of the service through means of machine learning algorithms applied using Jupyter notebooks in Python and Azure Machine Learning Studio

Cornell Biomedical Device

October 2019 – Present Ithaca, NY

- Integrated myoelectric sensor activity with negative biofeedback from a micro-vibrational motor to break the habit of unconscious jaw clenching (Bruxism)
- Assessed the anticipated regulatory pathway of our products, including outreach to necessary medical and business professionals relevant to the chosen device
- Developed an algorithm to distinguish Bruxism from masseter muscle activity using MATLAB

TECHNICAL SKILLS

- MATLAB, Python, R, SQL, Arduino, CREO, Fusion 360
- Wet-lab expertise, flow cytometry, cell culture, PCR, gel electrophoresis NMR, Western blot, data processing, statistical analysis, biomedical instrumentation

EDUCATION

Cornell University

Biomedical Engineering

August 2018 – May 2022

GPA

4.0

Alpha Omega Epsilon

Engineering Learning Initiatives Tutor

Public Engagement in Physics Leader

MATLAB Consultant

PROJECTS

COVID-19 Steamer

- Designed, manufactured and tested steam device for the COVID-19 pandemic with ability to sterilize surfaces in a short period of time with minimal maintenance and minimal usage of electricity

Modeling Drug Penetration in Tumors

- Modeled drug penetration in a spheroid using MATLAB, taking into account radial diffusion and drug binding

ML Model for Polycystic Ovary Syndrome Diagnosis

- Being afflicted with PCOS, I developed a machine learning model to help diagnose patients with the condition using a dataset of common symptoms

Engineering Organoids – Singh Laboratories

- Created functional "living" immune organoids to recapitulate selective aspects of lymph nodes

Phosphorus Accumulating Organisms in Oneida Lake

- Innovated method to take sediment samples from Oneida Lake using gravity corer to determine if phosphorus accumulating organism reside in Oneida Lake

Ebola Survivor Observation System

- Designed wristband and contact lens system that would be able to determine resurgence of the Ebola virus in survivors, awarded first place and presented project at Global STEM Alliance Summit