RONIL SYNGHAL

WORK EXPERIENCE

FULL-STACK ENGINEER
Early Stage Startup / May 2021-Present
- **Lead full-stack development & UI/UX** for various projects for upcoming healthcare software design & consulting firm
- **Designed end-to-end application** for data-driven psychological assessment of employee motivation using **SQLite** for databases**, Python frameworks for API Design & NLP**, & **React.js** for user experience
- Developed early warning system for nephrology practice **leveraging ML techniques** against 7 components of medical history to **automate risk-stratification for 3000 patients** to reduce hospitalizations

MACHINE LEARNING RESEARCH INTERN
Radhakrishnan Lab (UPenn) / Jan 2021 - Present
- Worked under Dr. Ravi Radhakrishnan to **build quantitative models** of signaling networks relevant to **profiling & predictive modeling** of clinical cancer mutations in many transformed cell lines
- Used biophysical/biochemical research to understand activation of kinase mutations to **improve parameters for a neural net tool** which **predicts mutation effects** & allows personalized cancer treatment

ENGINEERING & BUSINESS ANALYST INTERN
Kaiser Permanente / Jun 2019 - Dec 2019
- **Prototyped** tracking of hospital assets & employees using RF-enabled ID badges, & **created a heat map in JavaScript** to track the IOT devices
- Designed & developed the **user experience** for the **patient-facing nutrition tracking app** using Flutter
- Tracked **investment & core budgets** for the Chief Data Office in Excel

PROJECTS

BLUETOOTH-ENABLED ECG DEVICE FOR ASTRONAUTS
Bioengineering Modeling, Analysis & Design / Jan 2021 - May 2021
- **Developed algorithms for ECG waveform analysis** & biomarker detection after filtering respiratory & heart rates from ECG data
- **Designed an electronic circuit** to extract & condition ECG signals & transmit to a PC over Bluetooth **for portable cardiac monitoring**

FALL DETECTION SYSTEM
Human Systems Engineering | Aug 2019 - Dec 2019
- Analyzed **Children's Hospital of Philadelphia data** to solve the prevalent issue of falls in several departments
- Worked closely with nurses & staff to **conduct surveys & gather real-time patient data** on falls & common causes
- Used results to devise solutions including: a diagram of where & how falls were most likely to occur for staff reference, a **design improvement** for improved non-slip socks, a **fall detection device prototype** built & coded using SolidWorks & Arduino

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EDUCATION

THE UNIVERSITY OF PENNSYLVANIA
(Expected graduation May 2022)
B.S.E Bioengineering Candidate
- GPA: 3.70/4.00

M.S.E Robotics Candidate
- GPA: 3.97/4.00

Relevant Coursework & Certifications
- Bioinformatics
- Brain Computer Interface
- Intro to Machine Learning
- Training Neural Networks
- Building RESTful APIs (Flask)
- UX (IxD, Research)

Extracurricular Activities
- Penn Masti (South Asian Fusion Dance Team)
- Engineering Deans' Advisory Board (EDAB)
- Varsity Tutors

ADDITIONAL SKILLS

Proficient: Python (Flask, Dash, Pandas, NumPy), SQL, React.js, MATLAB, R, SolidWorks, Rapid Prototyping, UI/UX Design

Intermediate: HTML/CSS, Onshape, Git, JavaScript

Learning: Flutter, Python (TensorFlow), Swift