

SUMMARY

A passionate Engineer and a Bioinformatics graduate student looking for opportunities that can leverage my engineering and computational skills to innovate in healthcare, while making a difference in patient care

EDUCATION

Johns Hopkins University, Baltimore, MD
Texas A&M University, College Station, TX

M.S. IN BIOINFORMATICS | FALL 2022- SPRING 2024 (3.8 GPA)
B.S. IN BIOMEDICAL ENGINEERING | GRADUATED IN 2021

PROFESSIONAL & RESEARCH EXPERIENCE**Moffitt Cancer Center [Jun 2023– Present]****Graduate Research Assistant (Machine Learning Department)**

- Overall Survival prediction of Pan-Squamous Cell Cancer using multi omic data:
 - Responsible for Data Preprocessing/feature extraction of multiomic features coming from several genomic databases to be used as input for self-normalizing network to generate embeddings for multimodal overall survival prediction
- Early Detection of Pancreatic Adenocarcinoma:
 - Spearheaded Data preprocessing of IPMN histopathology slides/images for image segmentation to detect blood vessels and cellular nuclei that are present in patients with Pancreatic Adenocarcinoma

VERITY TECH [Jun 2020– Aug 2022]**RESEARCH ENGINEER (MEDICAL DEVICE STARTUP)**

- Led documentation for product's Quality Management System per FDA medical device/software regulatory standards
 - Documented all engineering related design controls for Class 2 Medical Device (*Protected under NDA*)
 - Analyzed risks and developed traceability and risk mitigation
 - User Manual, as well as human factors and usability training related items
- Designed device components that aid Verity product during physical therapy, using physiological parameters and biomechanical concepts (*Internship Summer 2020*)

Department of Biomedical Engineering, Texas A&M University [July 2019 – April 2020]**UNDERGRADUATE RESEARCH(UNDER DR. YAKOVLEV / E. GIL)**

Leveraged Convolution Neural Networks and classifiers to diagnose different cardiac arrhythmias such as Atrial Fibrillation and Ventricular Flutter for early stage detections

- Acquired data from MIT-BIH Database and filtered to determine PQRST points. Calculated transition intervals, in which signal transitions into an arrhythmia state. Researched different features used to classify data.
- Developed convolution network using Keras and TensorFlow packages. Modeled activation network (Relu), while testing different hyperparameters. Utilized max pooling, non-linear regressions, and activation networks.

ZIMMER BIOMET, Warsaw, Indiana (Internship) Summer 2018:**QUALITY ENGINEER, SUMMER INTERNSHIP**

- Implemented DFMEA/UFMEA, Product Specifications for Carpal Tunnel Instruments.
- Developed RCTM (Risk Controllability Trace Matrix), Design Inputs, Product Specifications, and traceability for Convertible Glenoid Shoulder Replacement.

PROGRAMMING SKILLS

Programming Languages: Python, SQL, R

Bioinformatic Tools: GALAXY, SPLIGN, Glimmer, NCBI Variation Viewer, UCSC Genome, Ensembl, IGV

Machine- Learning Techniques: SVM, Decision Trees, Linear/Logistic Regression, Random Forest

Machine/Deep-Learning Tools: Numpy, Scipy, Scikit, Pandas, PyTorch Geo, Keras & TensorFlow/

PyTorch IDE and Tools: Git, AWS EC2, VS Code, Jupyter lab, PyCharm, Excel

GRADUATE COURSEWORK: Neural Networks, Tools for Genome Analysis, Data Structures and Algorithms, Molecular Biology, Computer Concepts for Bioinformatics, Comparative Genomics

<https://github.com/amukund3>