VIGNESH RAVINDRANATH

(469) 569-2349 • viggyravi@utexas.edu • linkedin.com/in/viggyravi

EDUCATION

The University of Texas at Austin	**MS, Biomedical Engineering (GPA: *3.77/4.00*)**	**Aug 2019 – May 2021**
	BS, Biomedical Engineering (GPA: *3.62/4.00*)	**Aug 2016 – May 2020**
McCombs Summer Institute	**Minor, Business**	**Summer 2018**

Course Work: Machine Learning, Bioinformatics, Algorithms, Software Design and Implementation, Database Systems
Skills: Experienced in Python, R, Java, MATLAB, Linux, Arduino, Microsoft Excel; familiar with MySQL, AWS, C/C++

DATA ANALYSIS EXPERIENCE

Grid World – Q-Learning [Python] **Fall 2020**
- Used Q-learning to train an agent to walk across a sidewalk while avoiding obstacles and picking up litter
- Developed independent reward functions to train the agent for modules – sidewalk, obstacle, litter – and linearly combined the modules to obtain an optimal policy

Gene Prediction in Metagenomic Fragments – Independent Project [Python] **Summer 2020**
- Created an ab initio method for predicting coding genes in microbial genomes
- Reduced relevant genomic data into few informative features through feature extraction and dimensional reduction
- Achieved an overall 92% gene prediction accuracy

Automated Pollen Classification Device – Capstone Project [Python] **Aug 2019 – May 2020**
- Developed an automated pollen classification device to eliminate the need of manual pollen counting
- Achieved an overall 91% image classification accuracy by artificially expanding size of training dataset by 8X through image augmentation and by fine-tuning a CNN (VGG16)
- Oversaw project budget (**Microsoft Excel**) and the agenda (**Microsoft Project**)

WORK EXPERIENCE AND ACADEMIC PROJECTS

Teaching Assistant, *The University of Texas at Austin* **Jan 2021 – May 2021**
- Lead three 3-hour lab sections/week and mentored 60 students while they prototype wearable biomedical devices

Biomedical Engineering Intern, *Nano Global* **Nov 2019 – Feb 2020**
- Successfully pitched a plan to automate content curation for the AI-powered health app using existing REST APIs

Biomedical Researcher, *The University of Texas at Dallas* **May – Aug 2017**
- Found a positive correlation between glucose concentration and impedance, enabling the development of a sweat-based glucose sensor for diabetic patients
- Improved data analysis throughput from 2 to 6+ tests/day by automating sensor data processing and visualization using **Python** and **XML**

Improving Cancer Treatment Scheduling via Mathematical Modeling [MATLAB] **Spring 2020**
- Created a mathematical model to predict the effects of two cancer therapies on non-small cell lung cancer (NSCLC) growth, and determine an optimal schedule to administer the therapies (*maximal tumor reduction while minimal toxicity*)
- Modeled drug effects (absorption, distribution, metabolism) on tumor growth using ordinary differential equations (ODEs)

Corrective Running Form Device [Arduino] **Fall 2019**
- Created a real-time, corrective running form device with an **Arduino**; attached sensors on the foot, ankle, and hip to determine the runner's form and provide real-time feedback (sounds) to alert runner of their incorrect form
- Programmed pull-up interrupts and used SPI communication to receive data from three inertial sensors

LEADERSHIP

VP Finance for Indian Student Association **Aug 2018 – May 2019**
- Increased sales revenue for our university-wide dance competition (TAAL) by 20%
- Raised over $5,000 in sponsorships towards our annual national acapella competition (Jeena)