

Arsham Mehrani

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EDUCATION

California State Polytechnic University, Pomona

Bachelor of Computer Science, Minor in Data Science

Pomona, CA

Expected May 2022

- Major GPA: 3.72
- Undergraduate Research Fellowship at CALSys Lab.
- Dean's list for three semesters.
- Director of Programming at Science Council.

EXPERIENCE

Research Assistant

August 2021 – Present

Cyber Adaptive Learning Systems Lab (CALSys)

Pomona, CA

- Built a prediction model using an ensemble of machine learning models such as Random Forests, Naïve Bayes, and Neural Networks to predict software vulnerabilities 90 days before an attack.
- Developed the prediction models by cross-examining the published time of a vulnerability on NVD and Mitre databases to predict the likelihood of a vulnerability getting exploited.
- Improved the Neural Network architecture and accuracy from 20% to 87%, using a proportional number of layers and neurons to parameters and optimizing the activation functions according to each parameter, resulting in a manuscript and pending publication.

Software Developer Intern

January 2021 – August 2021

Sep Electronics

Mission Viejo, CA

- Developed the business website using the Shopify platform to optimize orders and inventory.
- Installed and tested the company software on PCBs and LCD touch screens.

TECHNICAL SKILLS

Languages: Python, Java, HTML/CSS/JavaScript, SQL

Technologies: NumPy, Pandas, Sci-kit-Learn, TensorFlow, Keras, React, Django, Flask, LaTeX, Git & GitHub, Linux/Unix environments.

PROJECTS

Heart Disease Prediction

November 2021

- Built a Neural Network model to predict the likelihood of heart disease in patients using the official CDC data set for the USA to train the model, reaching the optimal accuracy of 81%.
- Produced an ensemble prediction model using other algorithms including Logistic Regression, Random Forests, and SVM resulting in increased optimal accuracy to 87%.

Music Recommender

December 2021 – Present

- Built a web application for music recommendation with knn and item-based collaborative filtering algorithms using HTML/CSS/JS on the front-end and Python on the back-end.
- Developed a crawler using Python to mine data such as name, avg rating, and the number of ratings on one million recently released songs to create a database for the prediction algorithms.

Discord Bot

October 2021

- Developed a Discord bot using Python Discord APIs with various moderation capabilities such as taking polls, restricting words, reminders, translation, and more, simply for fun!
- Created a web server using flask and used multi-threading to simultaneously run the bot and the server to keep the bot always running.

A* Path Finding Algorithm

December 2020

- Created a randomized maze with a variable number of squares using JavaScript and the P5 framework with start and endpoints for the algorithm to navigate through.
- Implemented and animated the A* shortest path algorithm using JS and the P5 framework to show the shortest path and all the squares that the algorithm traversed through to clearly demonstrate how the A* algorithm works.