Samyam Pandey

https://github.com/samyam-pandey

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Texas A&M University attendee majoring in Computer Science. Experienced in Python, C++, and several other coding/machine learning applications. Avid outdoor enthusiast and soccer player.

Education **Bachelor of Science in Computer Science and Bachelor of Science in Mathematics, May 2023**
Texas A&M University College Station, College of Engineering.

Courses Differential Equations**,** Computer Organization**,** Data Structures & Algorithms**,** Discrete Structure Computing, Intro to Programming (C++), Engineering Computation, Linear Algebra, Calculus III, Statistics, Calculus II, Calculus I, Physics Mechanics, Chemistry

Key Skills

Proficient in **JAVA**, Proficient in **HDL**, Proficient in **Haskell,** Proficient in **Scheme**, Proficient in **Python**, Proficient in **C++**, Proficient in **RStudio,** Proficient in **MatLab and Simulink**, Proficient in **Tensorflow,** Proficient in **ArcGIS/ QGIS,** Proficient in **Assembly Language**, Authorized to Work in the U.S.

Work Experience

Software Engineering Intern, Bell**,** Fort Worth, TX, **June 2021- August 2021**

- Built an algorithm in **Python** and **QGIS** that models corrosion progression on aircrafts based on environmental conditions at different locations in **CSV/Shapefile** format used to help Bell's aircraft decline its deterioration.
- Worked with Bell's Mission Link team on current data models used for vibration health data on commercial aircraft, and then coordinated a potential exchange format suitable for FVL programs.
- Documentation of proposed algorithm basis for selection and representative code can be found here.

Research

- *Veo Ride Bike-share Optimization: Determining Long-Term Usage Patterns and Key User Hotspots*- Used datasets provided by Texas A&M University Transportation Services to improve the efficiency and the effectiveness of the bike sharing system Veo Rides. Using machine learning, data and predictive modelling, we designed a system that implements bike stations at effective locations with high demand of potential users. Tools used to conduct analysis and visualization were **Python**, **ArcGIS Pro** and **Excel**.

Primary Projects

- *Questions*- Using **Python** created an AI question answering system that performs two tasks: document retrieval and passage retrieval. When presented with a query (a question in English asked by the user), document retrieval will first identify which documents are most relevant to the query. Once the top documents are found, the top documents will be subdivided into passages so that the most relevant passage to the question can be determined.
- *Traffic Signs*- Used **Python** and **Tensorflow** to build a neural network able to classify road signs based on images of those signs– stop signs, speed limit signs, yield signs, and more. Did this to help build a proficient computer vision program for self-driving cars. This allows these cars to develop an understanding of their environment from digital images.
- *Shopping Predictions*-I built a nearest-neighbor classifier AI application using **Python**. Given information about a user — how many pages they've visited, whether they're shopping on a weekend, what web browser they're using, etc. — my classifier was able to predict whether or not the user will make a purchase.

Minor Projects

- *Seam Carving*- Wrote a program in **C++** that was able to resize, rescale and change the colors of a given picture file. This helped to understand how **C++** can be used in image reconstruction and post processing.
- *Attendance swipe*- Wrote a program in **C++** to set up a system that loads attendance data into a program and produces reports of who was present.
- *Minesweeper*- Built an AI that was able to determine safe spaces and mine spaces in a minesweeper game by receiving board input, using Python.
- *Tic Tac Toe*- Built an unbeatable AI, written in **Python**, that always chose the optimal move in a game of Tic Tac Toe.

Volunteering Experience

- Cleaning Temples in Nepal: Worked with the nonprofit Samaj Kalyan to help clean temples in both rural and urban areas. This experience strengthened my belief in community and working together.
- Bat monitoring: Worked with professor Victoria Bennett from TCU in finding what causes bats to fly into windmills.