Musa Azeem

Github:	LinkedIn:	Email:
github.com/Musa-Azeem	linkedin.com/in/mmazeem	musa.mazeem@gmail.com

Education

University of South Carolina; Columbia, SC
Bachelor of Science in Computer Engineering; May 2024 | GPA: 4.0
University of South Carolina Honors College | President's Honor List, All semesters

Experience

University of South Carolina; Columbia, SC
Research Assistant, December 2021 – *present*

- Worked with large SQL data sets of rodent neural activity. I developed methods to extract the data from the database, transform it for data analysis, and reformat the processed data as required by the client.
- Researched machine learning techniques to develop and improve models for human activity recognition and to predict the sleep status of rodents. Worked with a team to develop new machine learning models, including random forest and deep learning LSTM neural networks, and tested their accuracy for each project.
- Designed and implemented software engineering strategies to build software for university research. I developed a web application in Flask to allow clients to upload data, make predictions using trained models, and download the results. For human activity recognition, I worked on the development of an Android watch app to detect if the wearer is smoking.

Relevant Projects

SleepyRats Web App | Jan 2021 – *present* | github.com/smithandrewk/aurora/tree/application-dev

- Used the Flask micro-framework to build a web application for the UofSC School of Medicine. I used JavaScript, html, and bootstrap CSS to build a concise user interface. I used Flask in combination with an SQL database to develop the back end that allows users to upload files of rodent EMG/EEG neural data, classify them to different stages of sleep with trained models, download files in the required format, and view past activity on the web app.

Delta Project | July 2022 – *present* | github.com/smithandrewk/delta

- I worked with a team to research machine learning techniques to recognize the gesture of a person smoking in order to assist in human activity recognition research. Neural networks were developed with TensorFlow to compromise between accuracy in activity recognition and conservation of battery life on wearable devices.
- Developed an Android watch app in Kotlin and Android Studio to record, annotate, and process data from the watch's accelerometer to live feed into a running machine learning model and record for later research. The app's UI was built using Jetpack Compose and allows users to record time periods in which they are smoking, affirm or deny detected smoking gestures by the model, and record other research-relevant data.

K-Means-Cluster Analysis | Nov 2022 | github.com/Musa-Azeem/K-Means-Clustering

- Built a C++ program from scratch to preform k-Means-Cluster analysis on a given set of data, with a focus on object-oriented programming and algorithm design.

Skills

Java | Python | C/C++ | Kotlin | Flask | JavaScript | html/CSS | OOP | Flask | Android SDK | Machine Learning | Git