Mustafa Muhammad

mustafa.muhammad1@ucalgary.ca | 403-466-1021 | github.com/mustafamuhammad2000
mustafamuhammad.me

Education

Bachelor of Software Engineering (3rd year), 09/2018 – present
University of Calgary

- **Relevant courses:** Data Structures and Algorithms, OOP, Linear Algebra, Software Design, Discrete Math

Skills

Languages: (*C/C++, Java, Python, JavaScript, R, HTML, CSS*)

Technologies: (*React, Node.js, Express.js, Django, MongoDB, MySQL, Firebase, Heroku, Git, Tensorflow, Caret*)

Professional Experience

AppDirect, *Software Developer Intern* 01/2021 – Present

- Developed administrative tool enabling modifications of client dashboards using Django and React.
- Ensured code correctness with Python unittest and React Testing Library.

RWTH Aachen Unversity, *Researcher* 05/2020 – 08/2020

- Researched applications of support vector machines and naïve Bayes classifiers for the purpose of automatically detecting fake news.
- Built classifiers using the caret package in R, achieving a fake news detection accuracy of 67.48%.
- Uitilized scikit-learn to distinguish most useful features, increasing accuracy and decreasing training time for models.
- Leveraged Python Seaborn and R ggplot2 to visualize and present data.

Projects and Activities

Ai-Lofi, *Machine Learning Project* 11/2020 – Present

- Architected TensorFlow Keras model with word embedding and bidirectional GRU's that is capable of generating unique piano arrangements.
- Utilized Ai-Platform jupyter notebooks and GCP Buckets to train on over 20 GBs of data.

LectureAid, *Desktop Application* 11/2020 – 12/2020

- Developed application using Vosk Speech Recognition Toolkit to transcribe and summarize online lectures.
- Used Pydub to adjust frame rate and bit width of audio to improve speech recognition accuracy.
- Utilized NLTK to implement a TF-IDF algorithm to extract key sentences from the transcript, effectively reducing text transcription to 40% of its original size.

Fortuna, *Web Application* 10/2020 – 11/2020

- Used React, Node.js, Express.js and MongoDB to create a web application that records and analyzes spending habits, deployed using Firebase and Heroku.

Neural Net, *Machine Learning Library* 08/2020 – 09/2020

- Leveraged NumPy to develop neural network library that supports networks of arbitrary dimensions.
- Employed techniques from linear algebra and multivariable calculus to implement the backpropagation algorithm with stochastic gradient descent.

Extracurriculars

Executive, *U of C League of Legends Club* 09/2019 – present

- Provided live commentary and analysis for multiple 6-hour online tournaments with over 60 participants.
- Coordinated sponsorship opportunities with companies such as Red bull.