MATTHEW FORGET | AI/ML ENGINEER

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Github • LinkedIn • My Website

SUMMARY

I am a computer science graduate with a strong interest in integrating AI into society. At York University I took courses in machine learning, pattern recognition, and artificial intelligence, covering topics like neural networks, VC dimensions, and PAC models. My experience includes developing LLM based mutation testing software using the OpenAI API and creating a heart failure predictor with machine learning algorithms

EDUCATION

York University- BA in Specialized Honours Computer Science (2020 - 2024)

TensorFlow Developer certificate from DeepLearning.AI

Convolutional Neural Networks in TensorFlow certificate from DeepLearning.AI

Natural Language Processing in TensorFlow certificate from DeepLearning.AI

SKILLS

Java - Python - JavaScript - C++ - HTML/CSS - SQL - React Native - Flutter - ML (Sklearn, Pandas, Seaborn, TensorFlow) - Computer Vision - Neural Networks - NLP - Fine Tuning - Git - Kubernetes - Go - Microservices - Cloud - AWS

RELEVANT COURSES TAKEN

Machine Learning / Pattern Recognition - Advanced Data Structures - Artificial Intelligence - Capstone Project (LLM Based Research) - Intro to AI and Logic Programming - Distributed Systems - Software Design - Design and Analysis of Algorithms - Advanced Object Oriented Programming

PROJECTS

LLM BASED MUTATION TESTER | VISIT GITHUB

- Conducted research and development on LLM based mutation testing using GPT 3.5 as the model
- Evaluated and analyzed mutation scores, compilable rate, and similarity rate of mutations generated by both Pitest and my LLM based mutation tester, comparing results
- Developed Python scripts to automate the LLM based mutation tester
- Results indicated that GPT 3.5 turbo is not as effective at generating mutations as Pitest

PREDICTING HEART FAILURE IN PATIENTS | VISIT GITHUB

- Parsed data on medical patients (age, etc.) into training sections (80%) and test sections (20%)
- Used Jupyter Notebook to apply different machine learning models like logistic regression, KNN, and ensemble learning to predict the risk of heart failure in patients, with Seaborn to represent data, and AUC ROC to evaluate the models accuracy

IMAGE RECOGNITION AND NATURAL LANGUAGE PROCESSING | VISIT GITHUB

- Built a neural network in TensorFlow to recognize hand written digits and items of clothing using MNIST datasets
- Developed a CNN in TensorFlow to classify horses and humans, using callbacks to prevent overfitting
- Implemented data augmentation and transfer learning techniques to enhance model performance and prevent overfitting in image classification tasks
- Trained an LSTM model for sentiment analysis on the IMDB movie reviews dataset

CHESS APP | VISIT GITHUB

- Created a fully functional chess app using Flutter for cross platform performance, using dart programming language. A pure java version also exists on my GitHub that I made using android studio to test
- Currently adding AI functionality that will be a playable bot which learns to play like me

WORK EXPERIENCE

DAI - ML Engineer **Sep 2024 - Jan 2025**

- Engineered a full stack platform for a LLM based dating assistant, leveraging Python, Flask, and OpenAI fine tuned models to automate user interactions and apply user specific filters
- Developed custom prompt engineering and preference based match filtering to mimic user personality and boost conversation quality using NLP