Minsuan Teh

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Education

University of Edinburgh   Edinburgh, United Kingdom
Master of Science in Computer Science   September 2022 – August 2023
- Class of award received: Passed with Merit

University of Edinburgh   Edinburgh, United Kingdom
Bachelor of Engineering with Honours in Computer Science   September 2018 – July 2022
- Class of award received: First Class

Experience

Huawei Technologies   Kuala Lumpur, Malaysia
Global Technical Service Engineer   December 2023 – Present
- Involved in a harmonization project of 2 of the largest network operators in Malaysia.

University of Edinburgh   Edinburgh, United Kingdom
Java Tutor and Marker   January 2023 – May 2023
- Responsible for hosting weekly tutorial sessions and providing feedback to students.

Projects

Undergraduate Dissertation
- Implemented the algorithm by Dang, Qi and Ye (2012), the algorithm by Fearnley, Palvogyi and Savani (2021), and a basic iteration algorithm to find Tarski's fixed point in a complete lattice.
- The algorithms were implemented in Python and several experiments have been performed to investigate the advantages of the algorithms in different scenarios.

MSc Dissertation
- Implemented the model by Eisenberg and Noe (2001) and the model by Jackson and Pernoud (2019) to compute clearing payments in financial networks.
- The models were implemented in Python to investigate the effectiveness of each model and the factors influencing bankruptcy rate in financial networks.
- The algorithm by Dang, Qi and Ye was also implemented to compare against the models, particularly its dependency on the convergence rate of the monotone function is discussed.

A Ray Tracing Image Generator
- A C++ program that can be used to generate an image using ray tracing when given a JSON file.
- Includes various shading models, texture mapping, custom shapes, reflection, refraction, depth of field, soft and hard shadow, random sampling with jittering and Bounding Volume Hierarchy for complex scenes.

Human Activity Recognition (HAR)
- This project aims to develop a real-time HAR app on Android devices using two sensors (Respeck and Thingy).
- Data from the sensors is processed and stored in custom format before feeding the data into three different 3-CNN models in which each model has different hyperparameters and input dimensions.
- The models are implemented using TensorFlow before being exported to the Android app implemented in Kotlin.

OpenAI Gymnasium
- Used Value Iteration and Policy Iteration of Dynamic Programming to solve randomly generated MDPs.
- Successfully solved Taxi-v3 of OpenAI Gymnasium using Q-learning and on-policy first visit Monte Carlo.
- Successfully solved CartPole and Acrobot of OpenAI Gymnasium using Deep Q-networks and REINFROCE algorithm.
- Successfully solved Bipedal Walker of OpenAI Gymnasium using Deep Deterministic Policy Gradient.
- Implemented using Python and PyTorch.

Twitter Sentiment Analysis
- This project aims to investigate the influence of varying kernel sizes, number of layers, and input dimensions in Convolutional Neural Network architectures on the performance of Twitter sentiment analysis tasks.
- Models used include Naïve Bayes, Maximum Entropy, Decision Tree, Random Forest, XGBoost, SVM, Multi-layer Perceptron, Recurrent Neural Network and Convolutional Neural Network.

Skills and Languages

Python: TensorFlow, PyTorch, scikit-learn, pandas, NumPy, NumPy, SciPy, Matplotlib, Seaborn
Machine Learning: Neural Networks, Decision Trees, Principal Component Analysis, Temporal Difference and more
Other Skills and Languages: Haskell, SQL, Java, Junit, Solidity, Kotlin, Git, Linux, Google Cloud GPUs