

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
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Experience

InsiderSecurity

Kuala Lumpur, Malaysia

Software Engineer

May 2024 – Present

- Responsible for developing and optimizing backend algorithms and features of Automated UEBA.
- Single-handedly led efforts to optimize the core risk scoring engine, improving its ability to process high volumes of alert data efficiently by implementing multiprocessing, streamlining code, and redesigning the caching mechanism.
- Developed automated systems for the role and tag assignment of sensors, reducing manual intervention and improving the accuracy of sensor data processing.
- Proactively addressed system issues, such as fixing SharePoint access problems, resolving sensor downtime handling, and ensuring smooth operation of saved reports and subsystem services.

Huawei Technologies

Kuala Lumpur, Malaysia

Global Software Service Engineer

December 2023 – April 2024

- Involved in a harmonization project of two of the largest network operators in Malaysia.
- Crafting and sending HTTP requests to various system interfaces, thoroughly verifying responses to ensure correctness.
- Leveraging SQL skills for querying and updating the database, crucial for validating the system's functionality.
- Directly engaging with the CBS GUI interface to assess and validate the overall performance and features of the system.

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.
 - Guided students through the intricacies of the Java course materials, ensuring clarity and comprehension.
 - Evaluated courseworks, which contributed to the final course mark of the students.
 - Offered personalized feedback on both tutorial answers and coursework submissions, guiding students on areas of improvement.
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Skills and Languages

Python: TensorFlow, PyTorch, scikit-learn, pandas, NumPy, SciPy, Matplotlib, Seaborn and more

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, Amazon AWS, MongoDB, RabbitMQ

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.

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 REINFORCE algorithm.
- Successfully solved Bipedal Walker of OpenAI Gymnasium using Deep Deterministic Policy Gradient.
- Implemented using Python and PyTorch.

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.

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.

Decentralized Chess

- Implemented as a smart contract written in Solidity and deployed on Ethereum testnet.
- Various implementation designs are used to increase gas efficiency and gas fairness among both players.
- Having an option to play the game off-chain and only reporting the game's result to the contract to claim prize using cryptographic signature.

System Design Project

- Collaborated on designing a virtual robot for a bowling alley, which collects and delivers bowling shoes to customers.
- In this group project, I was responsible for implementing the robot's operating system.
- The robot was developed using Webots and Python.
- Customers can use their smartphones to request the robot for shoe collection and delivery.