**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   * Class of award received: First Class | September 2018 – July 2022 |
| **Experience** |  |
| **InsiderSecurity**  Software Engineer   * Core Risk Engine Optimization - Led end-to-end performance overhaul (multiprocessing, code streamlining, cache redesign) achieving ≥140% throughput improvement. * Cloud Integration (AWS & Azure) - Extended product from on‑prem only to hybrid/cloud by integrating AWS and Azure data sources, enabling compliance (e.g., GCC requirements) and broadening deployment scenarios. * Sensor-less Log Ingestion Pipeline - Designed and implemented a cloud & syslog-based ingestion path eliminating the need for on-prem sensors, expanding addressable market and simplifying onboarding. * Sensor Feature Expansion (C++ Agent) - Added support for new log formats, auditing, remote command execution, log rotation, and reliability fixes, improving adaptability and stability in different kinds of environments. * Automated Sensor Role & Tag Assignment - Built Redis-backed automation to classify and tag sensors dynamically, removing manual configuration effort and reducing misconfiguration risk at scale. * Forwarder System Enhancements - Re-architected log forwarding using RabbitMQ + TCP streaming for resilient, high-throughput delivery to third-party platforms and SIEMs. * Legacy System Refactoring & ML Enhancements - Modernized SQL anomaly detection and other legacy components with cleaner architecture, optimized queries, and ML-based improvements for accuracy and maintainability. * Mentorship & Team Enablement - Provided support and guidance to junior developers.   **Huawei Technologies** | Kuala Lumpur, Malaysia  May 2024 – Present |
| Global Software Service Engineer | December 2023 – April 2024 |
| * Involved in a harmonization project of two of the largest network operators in Malaysia.   **University of Edinburgh** | Edinburgh, United Kingdom |
| Java Tutor and Marker   * Hosted weekly tutorial sessions, guided students through Java course materials, evaluated courseworks and offered personalized feedback on tutorials and courseworks. | January 2023 – May 2023 |
| **Languages and Skills** |  |

**Programming Languages:** Python, Ruby, C++, C, JavaScript, Java, Kotlin, Haskell, Solidity, SQL

**Skills**: Machine Learning, MongoDB, RabbitMQ, Redis, Git, Linux, Azure, Amazon AWS, Kubernetes

**Natural Languages:** English, Mandarin (Chinese), Malay

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| **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 REINFROCE 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.

**Personal Website Development and Professional Portfolio**

* Built a personal website using Jekyll, a static site generator, to showcase projects and experience.
* Hosted and managed the site on GitHub Pages, ensuring seamless updates and reliable availability.
* Highlighted career milestones, technical skills, projects, and an accessible CV.