Kuan-Lin Huang (Daniel)

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EDUCATION

Imperial College London (MSc Computing) **Graduation Date: Sep 2025**

Relevant Modules: Algorithm, Computer Network and Distributed System (NAT configuration, socket programming, RPC), Software Engineering Design, Machine Learning, Software System Engineer, Computer Architecture

Thesis (Ongoing): Fine-Tuning Deep Learning Models on MCUs for Resource-Aware Personalised Inference at the Edge

Imperial College London (BEng Materials Science & Engineering) **Graduation Date: Jun 2023**

First Class Honour (GPA 4.0)

PROJECTS

Stock Prediction Model **2024**

- Created an **AWS Lambda function** to automate the retrieval of stock market data using the Alpha Vantage API and store it in **DynamoDB**, resulting in a more efficient and stable **ETL** data pipeline.
- Developed a robust LSTM deep learning model for stock price prediction and implemented a Monte Carlo option pricing model in **C++,** leveraging volatility calculations for accurate option pricing based on LSTM predictions and market trend.

TeleHealth - Cloud Application **2024**

- Developed and implemented a cloud-native architecture utilising **Azure Container App** with Dapr enabled, and SQL server databases to support the doctor appointment booking web app, resulting in a 30% increase in system scalability.
- Utilised **Spring Boot** framework to seamlessly integrate backend functionality into the software design, enhancing user experience and increasing customer satisfaction by 20%.
- Spearheaded the adoption of a **test-driven development** approach to enable testing automation in **GitHub Actions** with trunk-based git version control to ensure code quality, and **Docker** images to containerise microservices independently leading to a 15% reduction in system bugs.

Machine Learning Coursework **2024**

- Constructed decision trees using **numpy** and conducted model optimisation, resulting in a 15% increase in accuracy by implementing ensemble learning techniques such as random forest. Utilised feature engineering to enhance model performance, leading to a 20% reduction in prediction error.
- Implemented multi-layer neural networks with **Pytorch** and **sklearn**, incorporating dropout layers and early stopping to improve model generalisation. Achieved a 0.19 mse loss on test data by fine-tuning hyperparameters.

Imperial Overflow – Full-Stack Website **2023**

- Led a collaborative project, driving the design and implementation of a dynamic website tailored for efficient and convenient storage of StackOverflow questions and solutions. Showcased adept full-stack development skills using the **Next.js (JavaScript, HTML, CSS)** framework, with a keen focus on customising user authentication process with NextAuth, Middleware and bcrpyt. Executed API integration and established connectivity to a **PostgreSQL** database.

Chess Game Simulator **2023**

- Developed a captivating chess game simulator in **C++**, utilising sophisticated **object-oriented design**. Mastered the intricacies of managing game states and moves based on Forsyth-Edwards Notation (FEN). Implemented a resilient class system representing different chess pieces, enabling coherent Chess Board class framework.

WORK EXPERIENCE

Technische Universität Dresden **Remote**

Machine Learning Intern (Part-time/Full-time) **May 2022 – Oct 2022**

- Researched and implemented the **SMT python** library in surrogate modelling for a 2D soft robot, resulting in an efficient and effective alternative to neural network.
- Tested the accuracy of the surrogate modelling method on various scenario, producing results that were only 5% less accurate than neural networks while significantly reducing computational resource demands by 60%.

LEADERSHIP EXPERIENCE

Imperial Algothon **Nov 2023**

- Orchestrated a 200-participant algorithmic trading hackathon, handling everything from venue selection and catering to project proposal management. Led administrative tasks, including securing college funding, and managing invoicing.
- Successfully recruited major sponsors such as G-research, QRT, Wintermute, and BlackRock. Oversaw the seamless execution of the two-day event, managing challenges, and facilitating networking opportunities.

SKILLS

Programming experience: C++ (intermediate), Python, Java, SQL, JavaScript, HTML, CSS

IT Skill: Docker, Microsoft Azure, TinyML, Deep learning, Linux, bash, CI/CD, TDD, Git, RMI, Flask, SpringBoot

Certificate: Data Structure & Algorithm using C++ (Udemy), JPMorgan Software Engineering Virtual Experience Forage