

Brandon Loke

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EDUCATION

Nanyang Technological University

2020 - 2024

Bachelor of Engineering (Computer Science), Honours Graduate

- Elective Focus: Artificial Intelligence | Data Science and Analytics

WORK EXPERIENCE

Front-End Developer Intern

Jan 2023 – May 2023

Republic Power Pte Ltd

Singapore

Tech Stack: JavaScript, React, Cypress, Microsoft Power Automate, UiPath, MQTT, IoT

- Responsible for automating the user flow for the Fundus Camera using **Microsoft Power Automate** and **UiPath**
- Gained experience in setting up and working with various **IoT** products, such as environment sensors, and extracting data from them or their respective cloud platforms
- Developed modular, responsive **React** components to use in dynamic web pages
- Performed End-to-End testing on **React** web applications using **Cypress**, a Front-End testing framework
- Established communication across multiple **IoT** devices by configuring **MQTT** clients and brokers

PROJECTS

Osteoporosis Prediction Using Fundus Imaging and Medical Data

*Final Year Project - In collaboration with **Singapore National Healthcare Group (NHG)***

Tech Stack: Python, PyTorch, Deep Learning, Computer Vision, Data Augmentation, Joint Fusion Models

- Developed a **multi-modal deep learning model** using fundus images and patient metadata to classify individuals into Osteoporosis, Low Bone Density, and Normal categories.
- Designed and trained models with **PyTorch** using **transfer learning** and fine-tuning techniques, incorporating **Bayesian hyperparameter tuning** for optimization
- Fused visual and tabular inputs using **joint fusion models**, and applied **ensemble learning (soft voting)** to improve robustness
- Conducted **data augmentation** and **addressed class imbalance** to enhance performance on a limited dataset
- Achieved an **F1-score of 88.65%** and **accuracy of 88.53%** with the best-performing model, though validation limitations due to dataset size warrant cautious interpretation

Stock Price Prediction using Python and Machine Learning

Tech Stack: Python, LSTM, pandas, seaborn

- Developed a time series forecasting model to predict future stock price trends using **Long Short-Term Memory (LSTM)** neural networks
- Integrated the Alpha Vantage API to fetch real-time and historical financial data for model training
- Performed data preprocessing, analysis, and visualization using **pandas** and **seaborn** to identify patterns and evaluate trends

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CO-CURRICULAR ACTIVITIES

Nanyang-Technological University

Aug 2021 – July 2023

School of Computer Science and Engineering (SCSE) IT Subcommittee

Tech Stack: TypeScript, React, Next.js, Chakra UI, Jest

- Contributed to various projects for NTU's SCSE IT Subcommittee, including development of the merch store and website migration
- Built reusable and type-safe **React** components in **TypeScript** within a **Next.js** framework
- Styled components with **Chakra UI** CSS framework to ensure consistency and accessibility

SKILLS

Languages | English, Chinese (Basic)

Programming Languages | Python, JavaScript, TypeScript, Java, C, C++

Frontend | HTML, CSS, React, Next.js, Tailwind CSS, Chakra UI

Backend | Node.js, Flask, REST APIs, SQL, MySQL

Machine Learning | PyTorch, TensorFlow, Keras, OpenCV

Testing Frameworks | Cypress, Jest, Selenium

Developer Tools | Git, GitHub, Postman, MQTT, UiPath, Microsoft Power Automate