JOSHUA ALLAN

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GitHub
https://github.com/JoshuaAllan21

EDUCATION

University of East Anglia

BSc (Hons) Computer Science – University of East Anglia | First Class Honours
(Top 10% of Cohort)
• Dissertation: Neural Network Trading Systems for Stock Market Prediction – Awarded
85% (Written and Code); 87% (Presentation)
• Key Modules: Artificial Intelligence, Advanced Web Development, Data Structures &
Algorithms, Advanced Programming

2022-2025

Yateley Sixth Form

Maths (A)
Further Maths (B)
Competer Science (A)

2020-2022

PROFILE

A highly motivated and detail-oriented First Class Computer Science graduate (Top 10% of cohort) specialising in AI-driven fintech and software development. Experienced in API-driven fintech apps, built an intelligent trading bot (85% dissertation), and full-stack web platforms. Passionate about delivering innovative, efficient solutions that drive business value within technology-driven finance.

WORK EXPERIENCE

Software Developer

Ledger Migrator — Current

- Joined the software development team as a trainee Python developer during university summer breaks, contributing to commercial-grade tools for ERP system migrations.
- Collaborated on the development of internal applications used to automate data migration from legacy systems such as QuickBooks Enterprise and Microsoft Dynamics GP (Great Plains) to modern, cloud-based platforms like Microsoft Dynamics 365 Business Central and Odoo.
- Designed and implemented FastAPI-based microservices to extract structured financial and operational data from legacy databases and proprietary formats.
- Built and maintained Python scripts for automated transformation and ingestion of data into Odoo using its XML-RPC and REST APIs, reducing manual processing time by over 60%.
- Wrote robust unit and integration tests using pytest to ensure correctness and stability across migration workflows.
- Participated in peer code reviews, contributing to discussions on best practices in clean code, testing, and version control using Git.
- Collaborated closely with project managers and senior developers to ensure client-specific migration requirements were met accurately and on schedule.

SKILLS

Programming: Python, JavaScript, TypeScript, SQL, HTML/CSS

Frameworks: React.js, Next.js, Node.js, Express.js, Tailwind CSS, Socket.io, FastAPI, NLTK / spaCy, pytest, yfinance, TensorFlow, PyTorch, Scikit-learn, Keras, Pandas, NumPy, Matplotlib

AI/ML & Data: Neural Networks, Sentiment Analysis, Natural Language Processing (NLP), Information Retrieval (IR), Search Engine Development, Random Forest Classifiers, Data Pipelines & Feature Engineering, TF-IDF & Vector Space Models

Tools & Platforms: GitHub, Netlify, Docker, Linux CLI, Jupyter Notebooks, PostgreSQL, MySQL, SQLite, Pycharm, WebStorm

Techniques & Fintech: REST APIs, Alpaca API Integration, Stock Trading Automation, Time Series Forecasting, Backtesting, Statistical Testing, Data Preprocessing, Model Evaluation, Agile methodology

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REFERENCES

Available upon request.

PROJECTS

Stock Trading Neural Network Bot

September 2024-June 2025

- Built Convolutional Neural Network (CNN) and Bidirectional LSTM models using TensorFlow, Keras, and Adam optimiser to predict stock market trends and next-day low prices.
- Integrated advanced layers: Gaussian Noise (generalisation), Batch Normalisation (training stability), Dropout (overfitting prevention), MaxPooling, GlobalAveragePooling (dimensionality reduction), and Dense layers (final prediction).
- Optimised model architecture and hyperparameters (dropout rates, LSTM units, filter sizes) using Bayesian Optimisation across multiple training epochs.
- Utilised Categorical Cross-Entropy and Mean Squared Error (MSE) as loss metrics for trend classification and regression.
- Developed a custom Python backtesting simulator with Pandas, NumPy, and Matplotlib to rigorously evaluate model performance on historical market data.
- Incorporated technical indicators (RSI, MACD, Bollinger Bands, Moving Averages) and sentiment analysis to enhance predictive accuracy.

Portfolio Website

July 2025

- Built a responsive professional portfolio website using Next.js, React, TypeScript, and Tailwind CSS, hosted on Netlify to showcase projects, skills, and technical expertise.

Train Information Chatbot

April 2025 - June 2025

- Implemented a conversational AI chatbot in Python using TensorFlow, Keras, and advanced NLP techniques for intent classification.
- Integrated predictive analytics with ensemble models (Gradient Boosting, Random Forest, Logistic Regression) for train delay forecasting, cheapest ticket identification, and real-time train status updates.
- Enabled both casual user interaction and automated information retrieval.
- Published code and documentation on GitHub: github.com/AeJae/UEA-AI-CW2

Soft Skills

Analytical problem-solving | Agile teamwork | Stakeholder communication | Technical documentation & presentation