

# Aly Shahbaz Aftab Khan

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## EDUCATION

### University of Nottingham

09/2022 - 07/2025

- Computer Science with Artificial Intelligence BSc (Hons) | **First Class Honors**. GPA (Converted): **4.0**
- *Relevant Modules* – Machine Learning (**81%**); Software Engineering (**82%**)
- *Additional Training*: Software Engineering – J.P. Morgan Chase & Co., Software Engineering – Goldman Sachs, Software Engineering - Citi (All completed via Forage)
- *A-Level Equivalent*: 40/45 in IBDP (A-Level Equivalent), November 2021 – Highest Score in Pakistan. 17/21 in Higher Level Math, Biology and English. 20/21 in Standard Level Chemistry, Physics and French. 3/3 points in IBDP core.

## WORK EXPERIENCE

### Software Engineering Intern at Oii.ai

05/2025-Present

### Machine Learning Intern at Nestlé

08/2024–09/2024

- Worked alongside a 50-person Supply Chain Management team to design and implement various Machine Learning projects in Python.
- Created a sentiment analysis tool that tracks product sentiment over 3 different social media platforms and outputs a product popularity score.
- Developed a revenue prediction model that predicts the revenue of future products in a certain market based on similar products and back-tested this model in the 'cereals' category, returning a Mean Squared Error of only 7%.

### Artificial Intelligence Development Intern at Tintash

07/2024–08/2024

- Worked as part of a 3-person team building a game-development-specific LLM plugin for Unity using C#.
- Delivered proof of concept by implementing a code generator that created gameObjects and generated scripts automatically using the ChatGPT API, reducing the time to code a small game by almost 30%.
- Completed a standalone project, creating an LLM-powered multi-agent system using Python and Langchain, where each of the 5 agents communicated with one another.

### Quantitative Developer/Software Engineer at Nottingham Economics and Finance Society

10/2023–04/2024

- 1/25 selected from 92 applicants, developed a FOREX GBP/USD trading strategy that returned a simulated average profit of 13% over the past five years.
- As a quantitative developer, helped design the trading strategy by analyzing 10 years' worth of data for historical trends.
- As a software engineer, built and continuously updated the trading algorithm in Python. Also implemented the back-testing functions that simulated the strategies' performance.

### Software Engineering Team Leader at University of Nottingham & Beckford Consulting

10/2023-04/2024

- Led a team of 8 student software engineers in developing software for a partner company of the university.
- Roles included communicating with all stakeholders, planning the software development life cycle, holding the team to the principles of AGILE development, and ensuring the four deliverables were presented on time.
- Developed an application and an SQL database to be used by 300 students and instructors using React Native.

## RELEVANT PROJECTS

### Credit Risk Neural Network

- Built a Neural Network from scratch, trained on a credit risk dataset that outputs whether a loan will be accepted or rejected using Java.
- The NN uses the sigmoid activation function, and the user can set epochs, learning rate, hidden layer neurons, and fold, making the model completely customizable.
- The Neural Network has accuracy ranging between 70-90% and creates a graph of accuracy vs loss per epoch in each fold.

### Handwritten Character Recognition CNN

- Developed a CNN that recognizes handwritten characters using TensorFlow which returns a balanced accuracy of 99% in test sets.
- Preprocessed the dataset of 120,000 handwritten characters and tailor-built a model that uses batch normalization and dropout layers to optimize model performance.
- Added functionality allowing a user to draw any character and return the model's prediction after automatic preprocessing.

## SKILLS

**Programming Languages and Frameworks:** Proficient in Python, Java, JavaScript, C++ and C#. Experienced with LINUX, MySQL, AWS, TensorFlow, Scikit-Learn, Langchain and Natural Language Processing (with NLTK as well as implemented from scratch)