# William Sephton

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**Profile**

My postgraduate degree has allowed me to investigate deeper concepts that I find genuinely interesting, for example complex software systems and machine learning techniques. My studies have prompted a broader development in my intellectual curiosity and commitment to work which is reflected in the decision to continue my studies from an undergraduate to postgraduate level. Further exploring real world applications, the benefits they produce, and the potential impact is highly attractive; I am keen to explore how small and seemingly insignificant alterations to software and their artificial intelligence algorithms can affect massive change.

**Academic record**

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|---|---|
| 2024 – 2025 | **Student,** Computer Science (with AI) MSc, University of Nottingham |
| 2020 – 2024 | **Student**, Software Engineering BSc (Hons) 1st Class, Solent University |
| 2019 – 2020 | **Student**, Electrical Engineering BTEC Level 3 90 Credit Diploma, Uxbridge College |

**Technologies** Python – Java – NodeJS – Kotlin – JavaScript – Cloud Computing – Data Science Machine Learning Models

**Projects**

2025 **Complete ML pipeline for better document parsing to be more machine readable.** For my post graduate project, I developed a Python pipeline using OCR and Computer Vision techniques to better comprehend documents with integration of the GPT-4o model to enhance a structured format for PowerPoint files and PDFs. A prototype graphical user interface was also developed to allow for user testing to ensure the system benefitted the researching community.

2024 **PathProtector Android Application.** This mobile application had several components including a NodeJS backend with HTTPs certificates through NGINX, data encryption, a graphical administrative user interface that would interact with all the components through express API routes, and the core mobile application developed using Kotlin. This project was the groundwork for my complete understanding of developing an application and completing every process to push to production.

2025 **Natural Language Processing Chatbot.** This project is a chatbot created with a restaurant use case but implements core NLP techniques to ensure conversational and human responses with a key focus on the human-ai interaction experience. Some of the NLP techniques used are a TfidfVectorizer, a Naïve Bayes algorithm, and Cosine Similarity.

2024 **Machine Learning NASDAQ Stock Prediction.** This project runs PCA and K-Means clustering on the NASDAQ Stock data before using that data for EDA. The data is then used for prediction in three prediction models: Prophet, ARIMA, and a LSTM model. The user interface to display the project utilizes TensorFlow with added buy/sell signals for the stocks.

2023 **CrimeScanner Android Application.** This mobile application was developed as a predecessor to the PathProtector project as it involved integration with the google maps API and the storing, accessing, and manipulating room databases locally stored on the device.

**Links**

GitHub: **https://github.com/willsephton**