

WILLIAM SEPHTON

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SEEKING ROLES AS GRADUATE SOFTWARE ENGINEER

A Software Engineer passionate about building intelligent systems that bridge people and technology. My focus spans from **Natural Language Processing** and **Computer Vision** to **Android development** and developing **full-stack applications** from conception to production.

EDUCATION

MSc, Computer Science (With AI), University of Nottingham, 2024-2025.

Modules: Machine Learning, Human-AI Interaction, Data Science with Machine Learning, Advanced Computer Networks, Games

BSC (Hons), Software Engineering, First Class, Solent University Southampton, 2020-2024.

Award: First Class **Modules:** DevOps, Advanced Mobile Development and 3D, Data Science, Machine Learning, Advanced Database Systems, Object Oriented Design and Development, and Web Application Development

BTEC, Electrical Engineering, Uxbridge College, 2019-2020.

RELEVANT EXPERIENCE

Solent University, Southampton, United Kingdom: President of the Computing Society *September 2022 - September 2024*

- Undertook role of mentor/tutor to computing students of all levels. Delivered guidance in developing software and provided support across multiple projects, facilitated through weekly classes teaching programming for beginners and introducing advanced topics.
- Demonstrated **leadership capabilities**, **overseeing**, and **coordinating** of members to ensure an optimal learning environment.
- PowerPoint presentations for the beginner coding sessions were later uploaded to TES to offer other teachers the resources to teach students to code.

PROJECTS

PathProtector API and Android Application – February 2024 – Present | **Kotlin, React, NodeJS, MySQL**

An application for reporting obstructions on public footpaths for better planning when hiking.

- Developed and implemented a **RESTful API** that allowed for connections to the **MySQL** database.
- Created a **React** frontend admin dashboard for managing users and reported obstructions.
- Conducted User Studies for crucial feedback on user interactions with the application.
- Generated privacy policies and followed GDPR procedures to release the application onto the Google Play Store.

Machine Learning pipeline to enhance document comprehension by LLMs – May 2025 | **Python, NodeJS, JavaScript**

A modular **Python** pipeline that extracts all the information within a document and enhances the research process utilizing **AI**.

- Designed and implemented a modular pipeline using **OCR and Computer Vision** techniques to allow better understanding of pictures, charts, and figures within documents.
- Conducted user tests through a web-based user interface to evaluate the users experience compared to traditional methods.
- Project developed with an Industrial consult from AstraZeneca with their data library in mind.

AI Restaurant Chatbot – March 2025 | **Python, TensorFlow, NLP**

A Python chatbot with the use case of a restaurant assistant, utilising **NLP** techniques to create a seamless conversational prototype.

- A deep focus on the Human-AI interaction to create a natural experience using a **TD-IDF vectorizer** and **Multinomial Naïve Bayes** model to ensure the intents are understood correctly.
- Has capabilities for table booking and food ordering, saving the data to a CSV with opening hours and the menu being accessed from a CSV.
- Graphical User Interface using TensorFlow, with module code to enable easy extension.

Machine Learning based NASDAQ-100 Stock Prediction – January 2024 | **Python, TensorFlow, Machine Learning Models**

A Python modular pipeline that uses multiple machine learning techniques to accurately predict and analyse the stock prices of the NASDAQ-100.

- Initial analysis conducted through **PCA** and **K-Means clustering** on the data to be used in **EDA**.
- Three prediction models are used being the **Prophet**, **ARIMA**, and a **LSTM** model to show whether to sell or buy.
- The user interface to display the project utilizes TensorFlow in collaboration with libraries such as **Seaborn** and **Matplotlib** to represent the data visually.