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Proficient in Python (expert), C (proficient), C++ (competent), Java (competent), JavaScript (competent), Bash (competent), and MATLAB (competent), applied in public GitHub projects. Open to remote work. Fluent in Polish and English; basic proficiency in Chinese.

## Education

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**MEng/BSc Computer Science with Artificial Intelligence** (09/2021 - 06/2025)

**University of Leeds - *First Class / 4.00 GPA (Expected)***

- BSc Dissertation: Developed and fine-tuned CodeBERT, RoBERTa, and UniXCoder models for code completion using Masked Language Modelling. Optimised fine-tuning speed by 50% with LoRa on NVIDIA P100 GPUs. Attained a First-Class mark. Created a general algorithm for three Transformer-based models.
- Designed a reusable pipeline for fine-tuning on new data. Discovered that accuracy decreases after 100 tokens in docstrings, with exponential increases in generation time for longer sequences, except in AST models.
- Found that code-comment models performed best when predicting up-to 10 tokens consecutively. Achieved 81% accuracy on CodeSearchNet and 70% on CodeNN (C++ not included in training).
- Module grades: 96% Object Oriented Programming, 95% Computer Processors, 86% Artificial Intelligence, 83% Machine Learning, 95% Discrete Mathematics, 84% User Interfaces, 82% Software Engineering Project.

**The Grammar School at Leeds** (09/2019 - 06/2021)

- *A-levels*: A\*A\*AA in Computer Science, Mathematics, Economics, and Extended Project Qualification.

## Work Experience

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**Co-Founder - TimetableX** (10/2022 - Present) [timetablex.com](https://timetablex.com) [Demo Video](#)

- Co-founded TimetableX, attracting 200 users with 50 daily active users.
- Launched features allowing students to share assessment details publicly within modules, making coursework visible to others in the same module, with automated reminders via an internal notification system.
- Featured a persistent to-do list, customisable UI with over 30 themes, adaptable for both desktop and mobile resolutions. Integrates auth0 for authentication, stripe for payments, trpc for API.
- Developed a web scraper to map room locations from iCal data, caching events for 24 hours with background updates using Cron. Created a MongoDB model with 11 collections and integrated Prisma ORM.
- Opened discussions with the University of Leeds to improve the timetabling system, with TimetableX supporting both Leeds and York universities. Coded in Typescript and React, Python.
- Generates iCal links to allow user to migrate to other services while maintaining the events/assessments added.

**Car Engineering Tutor - TechCamp** (07/2022 - 08/2024, Summer job)

- Designed and implemented the transmitter and receiver code using ESP-NOW, a connectionless protocol utilising Wi-Fi frequency for peer-to-peer communication on ESP32 microcontrollers.
- Refactored code to enable students to customise the RC cars' behaviours based on button presses and programming animations on a monochrome display with u8g2. Taught a total of 50 under-18 students.
- Guided students through soldering and assembly of a custom Tamiya RC Car.
- Achieved a reliable communication range of 100 meters. Programming of two PCBs using C and C++.

## Projects

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**Sports Booker** – [sportsbooker.timetablex.com](https://sportsbooker.timetablex.com) - [Demo Video](#)

- Facilitated over 2,000 automated bookings for badminton courts at The Edge Gym in Leeds, serving two private clubs with a total of 50 users. Utilising Next.js and T3 App for a robust front-end experience.
- Leveraged Microsoft Azure VM for cron jobs and Docker to initialize the database using PostgreSQL.
- Implemented bots using Chromium to navigate the outdated Edge system for mass bookings and cancellations, with a flexible scheduling feature to adjust bot behaviour. Introduced an API for bookings data retrieval/
- Launched a Discord bot to notify users of booking failures and integrated a notification system for the website. Offered a command-line interface (CLI) for direct bookings through the API.

**Turtle Bot in an Exploding Ship** – [Demo Link](#)

- Introduced a program that controlled a TurtleBot to assist mission control in recovering a spacecraft knocked off course by an explosion while on route to the Moon. The objective was to calculate the spacecraft's distance from Earth and the Moon using images captured from the windows of the safe module.
- Fine-tuned a MobileNetV2 CNN to distinguish planets in the solar system.
- Expanded the dataset from 1,434 images to 50,000 through synthetic data generation using Gaussian blur, pixelation, and scaling techniques, improving model accuracy from 60% to 95% on the validation set.
- Employed Hough transform using OpenCV for star removal in captured images, utilising masking and dilation to extract and identify planets using the CNN model.
- The project attained the highest mark of 90% among 45 groups, with real-life environment testing.