

Alfred Carpenter

An enthusiastic penultimate-year student completing a Master's in Computer Science at the University of Warwick.

Skills

Languages: Python, Java, C, C++, Prolog, SQL, HTML/CSS/JavaScript

Tools and Methodologies: Linux and Bash, Git and GitHub, Agile and Scrum

Work Experience

Software Engineering Internship

07/2023 – 09/2023

Completed an 11-week internship at Autodesk Fusion360. Worked as part of a 6-person Scrum team, gaining software development and project management experience while improving my programming skills in C++.

Coding Tutor

09/2019 – 03/2020

Planned and delivered coding sessions teaching students Python and basic programming concepts. Liaised with the department head to ensure the sessions prepared students to take Computer Science at GCSE.

Projects

AI Timetable Optimisation

Implemented a simulated annealing optimisation algorithm, using backtracking and heuristics (including MRV and LCV) to solve timetable assignment problems. **(Tools: Python, CSPs)**

Instagram Visualised

Gathered my following/follower relationships from Instagram, employing Gephi to plot the data as a network graph. Created a blog post explaining the process and results. **(Skills: Excel, Gephi, Presentation)**

Network Traffic Analyser

Created an intrusion detection system to detect SYN, ARP cache poisoning attacks and blacklisted URLs. Incorporated multithreading to increase the performance of the system. **(Tools: C, Valgrind)**

Notionify: Chrome Extension

Developed a Chrome extension to automatically generate and insert Tikz diagrams into a Notion document. Used an online API to produce the graphics based on source code. **(Tools: APIs, JavaScript, HTML, CSS)**

Automatic Darts Scorer (ongoing project)

Developed a computer vision-based darts scoring system to accurately detect and locate darts on the board, calculate scores and offer intelligent shot recommendations based on a player's ability. **(Tools: Python, Image Processing, Probability Theory)**

Education

MEng Computer Science

University of Warwick

09/2021 – 07/2025

Current Grade: 1st

A-Levels (A*, A*, A*, A)

09/2019 – 07/2021

Mathematics, Further Mathematics, Economics, Art and Design

GCSEs (Six 9s, Three 8s)

09/2017 – 07/2019