

James Pilcher

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EDUCATION

BSc Computer Science (with Year in Industry), University of Exeter

09/2021 – 06/2025

- First Class Honours Average, Dean's Commendation (21-22), Faculty Commendation (22-23), Computing Society President (22-23)
- Software Development, Data Structures and Algorithms, The C Family, Discrete Mathematics, AI and Applications.

A-Levels, Peter Symonds College

09/2019 – 06/2021

- Mathematics A*, Further Mathematics A, Physics A

EXPERIENCE

Software Developer Intern, Rapyuta Robotics (Tokyo)

07/2023 – 05/2024

- Producing an AMR simulator in C++ and Unreal Engine, increasing order throughput for customers-specific warehouses by optimising the number of robots, loading/unloading locations, and other variables.
- Leveraged ROS components, Docker, and cloud infrastructure to simulate 50 robots and 10 humans at 10x speed.
- Created clear documentation and higher-level component diagrams, easing the onboarding of new team members.
- Improved our CI/CD pipeline by creating critical workflow runs, implemented robust integration tests for new features, and resolved flaky CI tests by initiating and actively participating in cross-team discussions.

Machine Learning Intern, University of Cambridge

06/2022 – 07/2022

- Engaged in thorough one-on-one tuition on the theory behind neural networks and computer vision, reading academic papers to support my learning.
- Programmed a neural network using pure NumPy arrays and toyed with various object detection models using Keras and OpenCV.

President, Exeter Computing Society

06/2022 – 06/2023

- Managed a team of 11 to provide bi-weekly events for over 140 members while ensuring financial stability.
- Enhanced relations with the Computer Science Department by orchestrating a 'Meet the Lecturers' social event that had over 100 attendees and collaborating on three hackathons.

Global Organising Team Member, JunctionX Hackathon

11/2022 – 04/2023

- Successfully pitched to potential partners and raised a crucial £3000 in monetary sponsorship for JunctionX Exeter.
- Oversaw the 48 hour event and demonstrated strong critical evaluation skills by assessing submissions in the judging process.

PROJECTS

StreathamQuest

- Collaborated in a cross-functional team to develop and integrate gamified challenges and quests into a sustainability-based Django web app, promoting environmental awareness.
- Led both technical and user story conversations and built an interactive map with NPCs using the Google Maps API and Django models, while seeking and incorporating feedback from the team members.

Maze Solver Notebook

- Researched and implemented numerous search algorithms for state space traversal, such as A*, DFS, and BFS.
- Presented concepts in an exploratory and educational manner using Jupyter Notebook and Matplotlib, highlighting the influence of different heuristics on algorithmic efficiency using.

Card Game Simulator – Java, JUnit, Object-Oriented Programming, Event-Driven Architecture, Multi-Threading

Personal Website – Vanilla HTML/CSS/JS, DOM Model, Web APIs, Blogging, Interactive Artwork

An Exploration of Recommendation Systems – LaTeX, CBF, CF, Literature Review, Written Communication

TECHNICAL SKILLS

Languages – Python, C/C++, Java, Bash, SQL, PHP, JavaScript, HTML, CSS, LaTeX

Libraries and Frameworks – Jupyter Notebook, Django, Flask, Pytest, Playwright, ROS, NumPy, Keras, OpenCV

Other – Linux, OOP, Version Control (Git), CI/CD, REST APIs, Docker, Apache, Agile, Team Management

CREATIVE WORKS

CodeArt – A series of 8 interactive art pieces using JavaScript to be exhibited at arts venue Exeter Phoenix.

Music – Accumulated over 1.5 million streams across 3 electro-acoustic albums under the artist name 'jimbob'.