# Charles Bareham

A programmer who has completed a gap year as a computer vision scientist, and is studying for a Computer Science degree. Currently looking for a summer 2024 internship in software development.

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Portfolio:
https://charlie572.github.io/

## EXPERIENCE

### Tupel — *Computer Vision Scientist*

Full-time August 2021 - August 2022; part-time December 2022 - present

This was a Year In Industry (YINI) placement.

I spent a year working on an implant scanner, which is a device used by dentists to help make prosthetic teeth. It accurately locates markers in the patient's mouth, and the dentist uses this information to design the prosthesis. It is much more affordable than its competitors, yet offers good accuracy. It is currently being tested in patients.

I was responsible for writing python code for the computer vision methods, communication with a computer, and the UI. I collaborated on algorithm design, UI design, and on investigating ways to improve accuracy. I talked to dentists to establish requirements of the project, and acted on customer feedback.

Computer vision requires good maths and problem solving skills. I also developed experimental skills to evaluate and improve the accuracy of the system.

This was my first professional coding experience, and my first project that will have an impact, since it will save dentists money. Furthermore, I found collaborating with others and working on a large year-long project from start to finish immensely satisfying. I look forward to working on other challenging and impactful projects in the future.

## SKILLS

Confident with Python

C

Some C++

Some JavaScript

Git

Computer vision

Socket programming

Some electronics experience

## OTHER QUALIFICATIONS

Industrial cadets platinum (an accreditation scheme for industrial placements)

Received awards at the end of sixth form in Computer Science and Further Maths

Semi-finalist in the Contribution To The Business (CTTB) award organised by YINI

Grade 5 distinction on guitar

DofE Bronze

## HOBBIES

Running

Guitar

Reading

Learning about science and technology

# EDUCATION

## University of Nottingham — *Computer Science BSc*

September 2022 - 2025

## St Brendan's Sixth Form College — *A Levels*

September 2019 - July 2021

Computer Science (A*), Maths, (A*), Further Maths (A*), Physics (A*)

Top-Down Shooter Game — Project in last year of sixth form

- Multiplayer game that can be played over a local network.
- Cooperative against waves of enemies.
- Used Python.
- Client prediction and backwards reconciliation to deal with latency.
- Snapshot buffer to deal with packet loss.

## Ashton Park School — *GCSEs*

September 2014 - July 2019

Maths (9), Physics (9),  Chemistry (9), Biology (9), Computer Science (8), Spanish (8), English Literature (7),  Art (6), English Language (5), Religious Studies (5)

# PERSONAL PROJECTS

## Two-wheeled Robot Car

- I used an Arduino.
- It can be controlled with an IR remote.

## Neural Network

- Developed from scratch.
- Uses backpropagation.
- I took the time to understand the calculus used.

## Open Source Contribution

I have recently started contributing to open source projects. I have submitted pull requests to [Black](), [PyPika](), and [Sherlock](). This has helped to develop my ability to read and understand the source code of complex projects.

References available on request.