

# Alex Mainstone

**Email:** [alecsmainstone@gmail.com](mailto:alecsmainstone@gmail.com)  
**Phone Number:** +447403527740  
**Portfolio:** [github.com/AlexMainstone](https://github.com/AlexMainstone)  
**Date of Birth:** 19/07/1999  
**Residence:** North Wales, Conwy, Abergele

## Personal Statement

Msc AI & Machine Learning graduate currently working in a support role, developing tooling and fixing technical issues in a. Works proficiently with others, evidenced by participation in a variety of group projects. Good problem-solving skills and ability to implement and learn new programming languages and libraries.

## Work

### Product Support Specialist (October 2021-January 2022)

iVendi

- Work in technical support at a business-to-business focused company, working with media companies to debug issues and solving dealership's problems
- Developed support tooling in Javascript (Node.js, React, Electron)
- Developed a Web API server for managing support tickets (C#)

## Education

### MSC AI & Machine Learning (2020-2021)

University Of Birmingham

#### **Merit**

- Mathematically focused course, involving Calculus, Linear Algebra and Statistics
- Learnt to apply Machine Learning techniques as well as work with neural networks
- Implemented several machine learning and neural network techniques from scratch
- Written critiques on scientific papers in the field
- Experience working with large datasets, and processing those datasets
- Developed Computer Vision systems
- Implemented various Machine Translation models for Welsh-English translation

### UG BSC Hons Computer Science (2017-2020)

Bangor University

#### **1st (First Class)**

- Relevant modules include Pattern Recognition & Neural Networks, Computer Graphics 2 Algorithms, Data Structures & Algorithms and Computer Vision.
- Worked on procedurally generating Fantasy Maps and phonetic city names for my dissertation
- Created an A\* algorithm interactive animation and implementation in Processing
- Hospital Database interface using python to access information on hospitals using SQL.
- Worked with a group to create a Welsh language learning website, generating an online quiz to test Welsh language using SQL databases and Java applets.

- Worked with M.O.T referral company to create Alexa M.O.T application, gaining experience working with clients

## 90 Credit Diploma in Software Development (2016-2017)

Coleg Llandrillo

**D\*D**

Worked with Visual Basic

- Created a chemical element program that looked up element information

## Core Skills

- C++ - OpenCV module in university (see Github), also regularly program hobby projects in C++, primarily games (SFML & SDL libraries).
- Python - Most of my masters coursework has been done in python, I also use it for hobby projects. I have implemented python scripting in game engines I have made. Primarily familiar with PyTorch when it comes to machine learning.
- Computer Vision - Worked with both OpenCV in MATLAB and C++ with small amounts of experience in python. However, I have implemented neural systems from scratch in python.
- Natural Language Processing - The focus of my masters thesis and some of my undergraduate thesis, worked with both statistical and neural implementations
- Java - The primary language taught for my undergraduate, also have some hobby experience with Game Development in Java (LWJGL and OpenGL). I am also confident with the Processing library in Java.
- MATLAB - Computer Vision (MSC) and Neural networks (BSC) courses were taught through matlab.
- Machine Learning - Experience with PyTorch and have written my own implementations of different forms of gradient descent and a neural network implementation. Have an understanding of Machine Learning theory that can be applied independent of context.
- Git - regularly use git & github for projects and university.
- SQL - worked with MySQL in my undergraduate
- In my free time I have worked with C# (Unity), Rust for game development, Lua scripting in games and JavaScript.

## Additional Skills

**Languages:** Fluent in both English & Welsh

**IT Proficiency:** Work on both Windows & Linux for hobby projects and work, knowledge of the command line and vim. Regularly used LaTeX for university work, also worked in Microsoft Office programs.

## References

**Dr Peter Hancox** (Thesis Supervisor)

**Email:** [p.j.hancox@cs.bham.ac.uk](mailto:p.j.hancox@cs.bham.ac.uk)

**Dr. Mian Muhammad Hamayun** (Tutor at University of Birmingham)

**Email:** [m.m.hamayun@bham.ac.uk](mailto:m.m.hamayun@bham.ac.uk)