# Alex Matthews

*Brighton, East Sussex, BN1 9AJ*

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## Skills

**Programming:** Java, C#, Python, C, C++
**High Proficiencies:** Java, C#, Python, NumPy, PyTorch
**General Proficiency:** C, C++, Web Development, MySQL
**Operating Systems:** Windows

## Education

**University of Sussex** **Brighton, UK**
**BSc Computer Science with Artificial Intelligence** **[September 2019 – July 2023]**

So far, I have achieved a First Class for both the years I have been at Sussex. The course has covered a range of programming languages so far, such as Python, C, C++, Java & Web Development. More recently, I have been working with NumPy, PyTorch, Scikit-learn, Open-CV and Matplotlib to create neural networks, analyse images and learn about Machine Learning in general. I have 3 modules covering these topics this term which are Computer Vision, Acquired Intelligence & Adaptive Behaviour and Fundamentals of Machine Learning. Mathematics has also been a core component of the course throughout the years I have been studying here. I have written a couple of small research reports on machine learning, cognitive science & artificial intelligence in web development. I have also covered topics such as data structures, algorithms, databases and in-depth research around the philosophy of cognitive science. During my time at the University of Sussex, I have been completing some personal projects (more details can be found below). These include making a game in C# with Unity, competing in Varsity Code (programming competition against other universities), programming for the Formula Student team and playing around with a Linux lab.

**West Kent College** **Tonbridge, UK**
**BTEC Level 3 Extended Diploma in IT – Achieved: DDM**

**Claremont Senior School** **Bodiam, UK**
**GCSE's - Achieved: B's in triple science, maths and English**

## Extracurricular Activity

**Creating a Game in C# using Unity Engine** **[March 2020 – Current]**

I started this project in the first Covid-19 lockdown, as I hadn't used C# before and wanted to learn both the language and how to use Unity. The game is a card game based on the board game Four Souls, and allows me to experiment with creating UI, game logic and programming. This quickly became an obsession during the lockdown, and I spent countless hours on the project. However, I kept broadening the scope of the project which meant I then had to refactor a lot of code I had already written and re-create a lot of the user-interface. The project is still not complete although I

am still working on it, but hindsight has taught me a valuable lesson; which is about planning and keeping to within a fixed scope of a project until that part is complete, so that I don't end up continuously refactoring and not making much progress because of it. This can only be done with extensive planning and efficient Test-Driven Development, so I now ensure I take this approach when starting a project.

**Varsity Code** **[September 2020 - Current]**

This is a programming competition with challenges set throughout the year, in which universities across the UK compete against each other. This provides a great opportunity to test my knowledge on several different programming languages and push myself to become better at them in a competitive environment. Last year, as a team we made it to the finals and hope to do the same again this year.

**Formula Student** **[September 2021 - Current]**

I am part of the Sussex Racing team, as the team's programmer. This means I am creating a program for the mechanics to analyse all the data, as well as transferring the data from the main control unit within the car to the desktops in the garage. I am also working as part of the team to design and program the dashboard and analytical system for the car.

**Global Design Challenge** **[January 2021]**

My team and I developed an idea to provide a solution to the poor economic environment for a small village in South America, by creating a digital platform which the local population could utilise to increase profits. The main income for the area is fishing, so we put forward plans for a software-based marketplace to be built. This would allow the fishers to track, sell and market their catches on a day by day basis, to restaurants and customers in a nearby town. The experience taught me how to encourage the strengths of team members and support those in the team who were not as confident. I also learnt about the process in which a project of this type follows, as well as what it requires to ensure it becomes a success.

## Technology in Personal Life

**Linux lab**

I have been able to use a dedicated pc as a Linux lab, so that I can learn and experiment with it. It is currently running Ubuntu and has allowed me to get familiar with how the operating system works, and the processes in which you need to follow to achieve certain tasks. I have also been able to see how this environment differs from Windows and the positives that come with both environments.

**Windows PC**

My main setup is a windows PC which I built myself in 2017. I like to keep up to date with current hardware news, as I am always looking to upgrade my PC as and when I get the chance. I enjoy playing games on this PC, along with my other passions which are all things to do with cars, driving and playing badminton for Sussex.