

I am currently on my fourth year of BSc Artificial intelligence and computer science at University of Edinburgh. I would like to apply for the position in data science and machine learning post graduate degree in Cambridge, since the content of this degree is a continuation of my undergraduate subject matter. I am expecting that I will have a great improvement with my skills in machine learning and data science if I finish this degree.

My passion to Machine learning was originated from the very classic book Artificial Intelligence: A Modern approach by Stuart Russell and Peter Norvig. I read this book by chance when I was a high school student. I was deeply attracted by the content from this book, even I was not capable to fully understand everything in the book, but I still managed to build a fundamental and objective concept of AI of my own. Thus, I had maintained a strong passion on studying computer science and maths, I studied math, further math and computer science for my A-levels and get A\*A\*A for these courses. Furthermore, in the year of 2016, I saw a YouTube video by 3blue1brown, it was just a brief introduction of MINST, then I was deeply shocked by how the mathematics really a concise language, and how machine learning is capable with recognising patterns and quantify relations etc. And this finally encouraged me to really make the decision to studying data science and machine learning.

Along with my four years BSc degree in Edinburgh, I have studied a wide range of the computer science knowledges and tried to implement the knowledges learnt from school to some real problem. At year1 and year2 I went to 2 companies to help them with the development of the back end(database) and front-end (user interfaces) systems. In the last summer, I got a internship with HUAWEI Technology as a AI engineer, participated in a large group project Optical Fibre Detections. The project was to collect the data from the optical fibre which is above an oil pipeline along hundreds of kilometres, to detect whether there is an abnormal vibration(Example could be the digger or rammer is working above the pipeline), and to clearly identify the abnormal event which means the algorithm should be able to recognise whether it is a digger or rammer is working above, not just report that there are something wrong going on at the above. Furthermore, in this internship, I also write a program to detect the laggings in the video. This program was able to tell which second the video has lagged or black out. It was able to work on the videos from several different video platforms. These experience makes me confident enough to say that I am ready to go for one step further on my informatics career.

My current honours project is the Evolutionary Reinforcement learning algorithms. I choose this project is because I am very interested in implementing the algorithms on the planning tasks, more specially in the RL-problems we will need to consider the whole problem of a goal-directed agent interacting with an uncertain environment. With the Evolutionary method, we can handle the non-stationary environments better, as we can develop the populations of agents and employ distributed policy representations to achieve automatically and well-suited adaptation in dynamic environments.

I wish to study in Cambridge not only because Cambridge has a leading position in machine learning research but also has renowned professors and collaborations with many leading institutes where I can touch with the state of art and take the aspiration. Moreover, I have always wanted to become a machine learning scientist after I graduate, the reputation and location of Cambridge can provide me with more opportunity to enter the industry.