As I am now studying at Cambridge, I have been to Science Festival in university of Cambridge. One of lectures “Natural or artificial intelligence” gave me a new perspective about AI, and the TV series “Western world” mentioned in it was also interesting. So i began to be fascinated by AI. And then i went to another lecture about AI in cancer, after that I thought it would be meaningful to do a research to save lives, and also another lecture called Bits and pieces: secrets of a digital world, which left a great impression on me - that although the art only enjoys a certain period, yet technology is something can stand the test of time. I was deeply touched by these words, which has also profoundly firmed my determination to the study of AI.

And the foundation of AI is computer science, so studying this course could provide me a stronger position to work in AI’s research.

Activities

1. November 2018, I took the British Senior Maths Challenge and achieved a high gold award which qualified me to participate in the British Mathematical Olympiad (BMO). It really encouraged me. And in this competition, I understood the importance of preparation. So for step, i prepared it in advance, and in the preparation, i found maths was really interesting.

When i did assignment in step support programme on the website, I was interested by a question about “Bachet’s Weights Problem”, especially the part associated with binary numbers. The problem is finding which weights we should put in minimum to weigh out all the integer number of ounces within the range given by question. At first, i just did these questions by finding the pattern, guessing and trying. Then, I found it is connected with binary numbers where the 1’s and 0’s correspond to whether a weight is in the pan or not , for example, in order to weigh integral ounces from 1 to 28, we need weight 1,2,4,8,16, and for the specific number 28 which is 11100 in binary number — i.e. one 16, one 8, one 4 are now on the pan. I was really surprised by the way of thinking this problem in binary system and it is also computing thinking.

(assignment 7)

1. Moreover, I was honoured to be invited to the Cambridge university ‘Maths Inspiration’ event in December 2018. The talk about how Golden Ratio appears in nature, made me realise that Mathematics is all around us. The spiral seed disk of the sunflower is closely related to the golden ratio. In order to maximize the number of sunflower seeds in the disc, the fraction of turn to put a seed is exactly 360\*0.618 (golden ratio). I believe it to be extremely satisfying to discover such surprising facts.
2. I was doing an Engineering Education Scheme at my current school. Our task was to improve the efficiency of train travel, indicating how full a carriage is, which speeds up the boarding and embarking of trains. In order to fulfill this goal, I have written some code, which was my first time to coding. Programming involves finding patterns and using abstract formulae or letters to represent a problem, making complicated things simple.

And our team also took part in Technical Design and Innovation (TDI) and Big Bang Science Fair with this project. After these projected-base activities, I understood how to use our own knowledge to solve problems in real world, and how to actually to do a project; time management, meeting minutes, final reports, presentation and stands.More importantly, it developed my ability to cooperate with others from different backgrounds with second language, handle the pressure and self-study new things when encountering unknown difficulties.

1. Science festival in the university of Cambridge
2. April

I visited SYSTRA in Shanghai in April, this company is now trying to use artificial intelligence to accomplish initial design of bridge, by make decisions including the position and size of piers and the category and dimension of deck. Until now, they use machine learning to achieve this target, objects are set for application so that it would analyse the data provided by SYSTRA from completed project and gain experience for the next project by making better decisions. This is my first time to get touch to the project in a company, which made me feel like doing this job in the future.

1. Kcl summer school

Computing thinking:

Pigeonhole principle

At first i just picked up the socks in my mind, and thought about the worst situation in order to get the maximum amount of socks which could ensure a matching pair. And this method was not logical and clear, it was easy to get lost. Afterwards, i found another way which could make this question more clear, it was to think about dividing socks into different drawers according to their colours, where Pigeonhole principle was applied. I found maths quite fascinating, especially the logical thinking.