

2020, Computer Science, Churchill College

I have a two-fold motivation to pursue a degree in programming. Computer science, especially machine learning algorithms are becoming influential in our society, and play critical roles in many scientific areas from engineering to new generation sequencing. I've always been interested in programming including developing mathematical algorithms, coding, language optimisation and applications. I have been fascinated by mathematical problems behind strategy and puzzle games, which I enjoyed playing since a very young age. In the elementary school, I regularly participated in national student competitions in mathematics, physics and programming and was ranked in the top 10 nationally. Since 2014, I have been involved in the special education programme of Prof. Lajos Posa, which introduces versatile and complex mathematics-based and logical puzzles to the most talented 10-12 students in the country. One of my supervisors, Dr Laszlo Nikhazy, who also worked for Google in Germany, became my tutor in programming. He made me realise I wanted to pursue computer science. In 2016, I continued my studies in the special mathematics class at Fazekas Mihaly Secondary School in Budapest. The atmosphere in the class is especially inspiring, as well as challenging. Here I continued to participate in computer science and mathematics competitions. In 2018, I was the second in the national Nemes Tihamér Programming Competition. In 2018 and 2019 I competed in the national trials of IOI and CEOI. In 2019, I was 16th in the national science competition (OKTV) in Physics. I was also involved in online contests, such as CodeForces and CodeChef. As I reached a more advanced level in programming, I preferred working on more complex problems and language development, rather than competing. I am genuinely interested in machine learning and neural networks. I have performed several related projects, including artificially intelligent algorithms (AIs) for games or for solving fundamental identification problems. I got familiar with how artificial intelligence is structured and layered. In 2018, I started to work for a small company, Bellum Games. I contributed to developing Stellae, a top-view strategy game. For this project, I learned how the Unity Engine works and how to manage codes of organised projects. In addition to my mathematics and computer science activities, I'm also interested in other areas of science. Since 2017, I regularly participate in science camps, where we identify and categorise minerals, digitalise data and discuss complex scientific problems. The leader, Dr Monika Fuxreiter is a professor in biochemistry, who introduced me mathematical problems related to protein function and higher-order organisations. I started to participate in one of these projects and my contribution has been acknowledged in a scientific paper (

<https://doi.org/10.1155/2018/6360846>

). I have been studying music theory for eight years and learned to play the guitar for twelve years. I like to play football, basketball and volleyball. I was part of the school's football team, and currently, am a member of the volleyball team. My hobby is robotics and I also like solving the Rubik's cube and playing chess. These help me broaden my horizons in logical and functional thinking. Studying at Cambridge University is a great opportunity for me to enrich my mathematical and programming skills. I will also enjoy the vibrant scientific atmosphere at the university, which will open new perspectives for me in science. I'm keen to be part of the diverse international community and meet students with many different ways of thinking. I'm convinced that discussions with them will stimulate me and will help my development. Cambridge University is an ideal place for many mathematicians and computer scientists, whom I know from

Hungary. I hope that I will be one of them in the next year. Thank you for the time and efforts to consider my application.