

2020, Computer Science, Churchill College

My enthusiasm for mathematics and logic dates back to my childhood. Playing strategic games such as chess or solving sudoku puzzles were among my favourite activities in elementary school. When I learnt the basics of programming at age 11, my goal was to create games, but later I realized that I can do much more with this knowledge. I would like to study Computer Science because it's based on mathematics and logic while having a lot of various real-life applications. I attend the special mathematics class in the Fazekas Gimnazium in Budapest, one of the top-ranked secondary schools in Hungary. As I've been inspired by my maths teachers and classmates, I started to spend more time with mathematics beyond the curriculum. I solved problems in the KoMal (the most prestigious Hungarian journal in mathematics and physics for secondary school students) and learnt about different topics mainly on combinatorics and number theory from online sources. Approximately 4 years ago I discovered how exciting problem-solving in programming can be and how strong a connection it has with mathematics, especially combinatorics and graph theory. Using C++, I started solving algorithmic problems and participating in online contests. I also tried to create some small projects, for example a game which plays five-in-a-row with the user (

<https://bit.ly/2IVzSep>

). Its main part was written in JavaScript. I have some experience in coding in C and Java too. Competitions played an important role in my studies. I'm proud of having achieved significant results on both national and international level: my greatest achievements are qualifying to the International Olympiad of Informatics (and finishing 167th out of 331 contestants) and gaining a bronze medal in the Central European Olympiad of Informatics (19th out of 55) this year. I took part in the International Olympiad of Metropolises in 2018, where I was awarded a silver medal (13th out of 64), I was a finalist in the Innopolis Open two times (2018 and 2019) and I was invited to the Romanian Master of Informatics, to be held this October. I won the Nemes Tihamer Programming Competition (the biggest national programming competition for 9th-10th-grade students) in 2018 and reached 4th place in the National Olympiad (OKTV) in Informatics this year. I have several valuable results in mathematics too: I became prize-winner in the Arany Daniel Mathematics Competition (biggest Mathematics competition for 9th-10th-grade students) in two consecutive years (4th place in 2017, 5th In 2018), this year I became 21st in the National Olympiad in Mathematics and I've been 18th in the IMO selection. I took part in the Naboj international team competition and got a 2nd place in 2018 (Junior category) and a 3rd place in 2019 (Senior category). Thanks to my results, I've been invited to several maths camps, including the IMO training camp in Dombovar this year and the MaMuT camp in Matrafured, where I participated in 3 consecutive years (2017 to 2019). In these camps, I learnt about several advanced topics, such as Ramsey numbers, the basics of financial mathematics, group theory or topology. I regularly attend the biweekly IMO training and the advanced level programming extracurricular class (an unofficial IOI training). Spending time with the best students inspired me to become more hard-working and more committed in the subjects I'm interested in. I also have some experience in teaching: I gave math lessons to 6th-grade students who applied to our secondary school and helped a younger student to learn competitive programming. After spending 6 years in the best special mathematics class in Hungary, I would be honoured to continue my studies in a similarly high-level university. I am applying in the UK because this

opportunity provides high standards of education and a motivating environment to me, where I can deepen my knowledge in both theory and application.