Due to my father's occupation, I have been attached to the automotive industry since a very young age. I exposed myself to the processes involving vehicle production and sales, seeking to discover and understand the underlying mathematics behind it. The fact that I could apply mathematical knowledge and thinking when I was investigating aftersales reports or algorithms related to self driving cars amazed me and has pushed me towards pursuing a course in mathematics.

The specialized mathematics class of Fazekas Mihály High School, which I have been attending for 6 years, is best known for its unique way of teaching mathematics, where students have to figure out the basic principles and the proofs for the theorems themselves. We explored fields beyond the usual curriculum such as algebraic and geometrical inequalities or advanced number theory. I engaged in mathematics outside of school with Lajos Pósa, a well-known Hungarian mathematician, who became a mentor to me in 2012. During his sessions, I encountered many interesting graph theory problems and found a beautiful proof for the Pick theorem.

Regularly held maths camps gave me the opportunity to solve problems in groups and dive into topics including game theory, where we had to figure out winning and cooperation strategies, or proved the Five Color theorem. To pass on what I learned, I held maths seminars for talented 12-13 year old students. I explored teaching methods and ways of building up and communicating the solutions, as well as understanding the not always clear idea chains and solutions of the pupils. I was in the top 12 in three consecutive years (2015-17) in KöMaL, a prestigious national mathematical journal where problems are given on a monthly basis. With the help of my teachers I won a national competition (Varga Tamás, 2014) which gave me further motivation to study mathematics, and I have also been in the top 10 in several others (Bolyai 2016, 2017).

To broaden my horizons in and beyond mathematics, I attended courses at Milestone Institute, an institution of advanced studies for gifted high-school students for 3 years. I enrolled in over 20 modules held in English, including Calculus I-III, Mathematics for Economics and Uncertainty. During the latter I got familiar with Bayesian inference and networks, and their computational implementation, which caught my interest.

Having deepened my knowledge in data mining by reading most sections from the book Introduction to Data Mining by Tan, Steinbach and Kumar, I started an individual research project with one of my tutors on vehicle-user satisfaction data analysis. The main idea of the project was conceived when I was looking at a dataset of owner reviews of a Hungarian website. After successfully scraping the data, I summarized its underlying relationships using correlation matrices, and built decision trees as predictive models. I had the opportunity to present my project at the Maths Beyond Limits camp in Poland. As applications are a major part of my interest, I was thrilled when I was offered an internship in a social sciences department of the Hungarian Academy of Sciences. There I work with agent-based models and I am building an opinion dynamics model in NetLogo that imitates a social media website with interactions between the agents.

Being the captain of one of the leading futsal teams of Hungary for 4 years and playing table tennis at BVSC for 3 years have taught me to take advantage of pressure and responsibility.

Later, I joined the Milestone Rowing Club both as a recruitment officer and rower, as I want to continue sportsin university.

As it matches my virtues and skills, I am very enthusiastic about the prospect to study mathematics at a UK university. This course would enable me to apply my knowledge in various fields, for example the vehicle industry, and at the same time to continue studying pure mathematics at a very high level.