

2019, Natural Sciences (Physics), Pembroke College

I have been curious about the new and unknown phenomena since my childhood. I enjoy understanding the operation of systems and acquiring knowledge, such as how the radio works. Numbers made a massive impact on me at school, and later I found my real passion in physics. Reality provides infinite questions, keeping me excited and eager to answer them - for example, how fast is the electric current? Why cannot it be faster?

I am keen on solving problems. Progression towards the solution gives me great pleasure: the joy of getting the breakthrough idea after numerous hours of thinking. The most satisfying problems are complex ones requiring creativity in physics and mathematics. For example, I am building an Arduino-controlled Turing-machine. The framework and the moving parts are built from elements of Fischertechnik (advanced LEGO); LEDs represent binary states; and a light-sensitive resistor reads said states. I am fascinated by algorithms, computers and the physics behind their operations.

Enthusiastic about programming, I am taking higher level classes at school. I passed the advanced level Matura in computer science with 99% and also taking advanced levels in mathematics and physics.

In 2016 I was selected to participate in the Hungarian Templeton Programme, aimed at identifying the top 1% of talented students. I have ranked in the top five at every prestigious physics and mathematics competition. I achieved 1st place at the Arany Daniel National Mathematics Competition twice (2017, 2016). I came 2nd (2017) and 4th (2016) at the Mikola Sandor National Physics Competition. I earned 4th place at the National Olympiad in Physics and 5th place at the National Olympiad in Mathematics (2018). I am proudest of my 8th place at the national selection competition for 49th IPhO. My ambition is to qualify for the next Olympiad, therefore I attend regular theoretical and practical sessions.

For three years I have been taking part in Hungary's prestigious monthly problem-based contest KOMAL, where I came in the top ten in physics and mathematics. The exercises enabled me to write my thoughts clearly, to be independent, hard-working, and to fight for my goals.

I enjoy meeting people who share my enthusiasm. I attend physics and mathematics study circles and the Lajos Posa camp for talents in mathematics. At the Hungarian Nuclear Society's 10th Nuclear Camp I attended intriguing lectures held by professors and carried out experiments relating to modern physics. In one, we could manifest considerably greater activity of dust collected from an unused room. I visited CERN's Large Hadron Collider, where I was impressed by the vast facility, especially the CMS experiment. At the MILSET International Science Summer Camp on robotics I presented in English about the benefits and drawbacks of artificial intelligence. During summers I worked managing databases and coding in HTML and SQL for a company handling customer's data. Here I learnt algorithmical

thinking which contributed to my increasing interest in this field. Working in micro and molecular biology laboratories at the wine research institute of Eszterhazy Karoly University, I extracted information from manually recorded data in Python and collaborated in writing an agrophysics book for university students. The encounters and experiencing the atmosphere of a research institute confirmed my intention to become a physicist.

I have a collection of over 100 books on physics and mathematics and over 30 academic journals, a few in English. Stephen Hawking's A Brief History of Time was thrilling and thought-provoking. I particularly enjoyed the geometry he involved, and it also increased my desire to learn more about physics in English.

My dream is to work as a physicist. I am convinced that a leading UK university provides me the best opportunity to achieve this dream.