

I find it captivating that although axioms are defined by mathematicians, they open up a whole new world. Practising mathematics is like exploring this universe; whenever I solve a problem or think about a concept, I feel like I am discovering knowledge, as opposed to inventing it. In my view, this is what sets mathematics apart from other sciences: it is precise and abstract, yet no matter how far-fetched an idea may appear at first, we can eventually uncover its applications.

When I was twelve, I started attending Lajos Pósa's weekend camps, where I met a community of enthusiastic students from all over the country. At these camps, instead of lectures, we learn by solving problems from different branches of mathematics, many of which turn out to be related. We are encouraged to ask follow-up questions or find alternative solutions, modelling mathematical research. Since last year, I have been volunteering as a teacher at these camps. I also held after-school classes for 6th graders for a year. I love teaching; it requires a completely different set of skills and I believe it helps me understand mathematics on an even deeper level. In 2023, I was invited to the Maths Beyond Limits camp in Poland. We were introduced to high-level areas of mathematics including knot theory, random walks and category theory, and had the opportunity to connect with students from across Europe. Something I discovered at these camps is that I love working in a team, as it facilitates sharing our ideas.

I attend the special mathematics class of Fazekas Mihály Secondary School, the highest-ranked in Hungary, where we have seven mathematics lessons a week, and study various advanced topics such as projective geometry, complex numbers and graph theory. This is certainly a competitive environment, shared with classmates who have similar fields of interest as me. We frequently discuss our thoughts on problems and come up with solutions together. Throughout my years here, I have participated in numerous competitions, with my proudest achievement being winning a silver medal at IMO 2024. Prior to that, I came 4th in the OKTV National Olympiad in 2024 and won the Arany Dániel Junior Olympiad in the preceding two years. I also regularly solve problems in KöMaL, the premier Hungarian mathematical journal for high school students. I ranked 4th in category 'B' in both 9th and 10th grade, and 5th in category 'A' in 11th grade.

Aside from mathematics, I am also interested in computer science. I see it both as a way to utilise mathematics in the real world, and as a powerful tool in mathematical research. I particularly enjoy competitive programming, which involves applying various mathematical concepts to derive an efficient algorithm. As the youngest Hungarian ever to qualify for the IOI, I won a silver and a bronze medal at each of the IOI, the CEOI and the EJOI, received two gold medals at the infO(1)Cup, and placed 2nd at the OKTV National Olympiad in 2024. I have experimented with several projects, such as creating a working calculator or a machine learning model capable of distinguishing handwritten digits.

I enjoy exploring mathematical concepts in my free time. While learning about complex numbers, I began investigating Gaussian integers, subsequently writing an article explaining their properties in a way high school students could understand them. This taught me about researching specific material and presenting my findings effectively. I later submitted the paper to the Polygon competition, where it was awarded the 1st prize.

I am keen on sports. I regularly play tennis, go bouldering or play football with my friends. I also enjoy cycling, hiking and playing board games with my family. I have been playing the piano for 10 years and I am an avid music lover.

I would love to continue my studies in the UK to experience its high standards of education and to become part of an international community of some of the best students from all around the world.