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Autobiography:

I was playing the nim game with my Dad on a car ride to Yosemite, becoming increasingly frustrated when my Dad could win or lose at will. Regardless of whether I chose to take one or two stones, my Dad was always able to instantly deduce the optimal choice leading to my defeat. As an ardent competitor, I simply could not accept this. After playing several more games, I started to notice a pattern and strategy to win when the numbers were small. I realized I could extrapolate these positions infinitely; nine-year-old me had unknowingly done a simplified Mini-Max algorithm.

I was first introduced to machine learning through a Linear Algebra textbook gifted to me by my calculus teacher. In a coding exercise introducing vectors, I was fascinated by how vectors could accurately represent semantic meaning. I could recover the capital of a country simply by adding the vectors of "capital" and the country's name. This initial exercise fueled my exploration into machine learning, with my curiosity only growing the more I learned.

After learning about Kaggle, I was excited to apply the knowledge I learned to actual tasks. The first task I did was a homework assignment determining whether an image was a cat, dog, or bird for a CS course from IBA Karachi. Through this task, I was introduced to the fascinating world of Computer Vision and deep learning competitions. I went on to participate in a variety of Kaggle-esque competitions, poring over a diverse range of architectures and techniques to maximize metrics across all sorts of datasets.

Though a majority of the experience participating in these tasks felt like pointlessly trying random ideas, the feeling of elation witnessing my own unique idea actually resulting in an improvement is unmatched. Being motivated by my passion for machine learning and a desire for this moment, I read through countless papers, surveyed textbooks, and consulted researchers. I often spent weeks working through a task, thinking about failure cases on car rides, runs, and even in my dreams.

After doing relatively well in a computer vision task, I was invited to go to NeurIPS and became

awestruck by the works published there. There, I started to grasp the potential of AI to impact existing fields: from decoding subtle signals in the mass distribution of the universe to instantly performing complex molecular simulations. My passion for AI deepened as I realized the potential this field has to impact the world.

I'm truly honored to be a member of the 2026 U.S. IOAI Team, and I cannot wait to apply all the knowledge I've accumulated in Kazakhstan.

I couldn't have done it without the help of those who supported me along the way. Thank you to Mr. Magee for sparking my interest in machine learning. Thank you to Cooper Sigrist for always giving me a completely new perspective to techniques and applications in this field. And lastly, thanks to my family for providing me with the resources and motivation to continuously explore machine learning.