Since childhood, I have harbored a genuine passion for numbers and geometric figures. As a little kid, I could easily memorize phone numbers, and I gradually developed an interesting habit of decomposing them into prime numbers. Years of studying mathematics expanded my knowledge, and I became more captivated by the beauty of logic and precision in the math world. I am amazed to see how a messy polynomial can be transformed into a product of more orderly structures, or how the sum of an infinite geometric series can be expressed in a simple form of fraction.

Throughout the years, I was not satisfied with merely taking courses and absorbing new knowledge. I passionately participated in various math competitions to put my theoretical knowledge into practice and cultivate my problem-solving ability. Among all competitions, I could distinctly recall a math problem I encountered during the preparation of the AMC. It was a probability-related question that asked me to get an odd number while making sure all even numbers appeared once. I was so engrossed in the question that I even skipped dinner, forgetting about the time. However, the sense of achievement that arose from solving the challenging problems was beyond compare.

Recently, I took some introductory courses in data science and marveled at the infinite possibilities that lie in this emerging field. During classes, I collaborated with my classmates on a case study about the identification and categorization of coins using computer visualization methods. We finished a paper titled “*Brazilian Coin Counter Research Report*” discussing a model we designed based on the AlexNet Convolutional Model. This valuable experience expanded my knowledge as I gained a fundamental understanding of data collection, data classification, and the Convolutional Neural Network models. My academic curiosity was piqued as I conducted a data analysis using Python.

To further my study, I believe the Department of Mathematics at Cornell will be the most ideal place for me. After careful school research, I am deeply impressed by the flexible curriculum and numerous upper-level courses. In particular, I am interested in taking MATH 4310: *Linear Algebra*, MATH 4500: *Matrix Groups*, and so on. By taking these courses, I will be able to establish a solid knowledge foundation of linear transformation, matrix factorization, and linear algebra that underpin my knowledge of CNN.

Aside from taking courses, I also expect to fully utilize the abundant research resources and practical opportunities provided for undergraduate students. In this rapidly changing world, I have long desired to reach beyond materials taught within the classroom and explore cutting-edge areas by applying my math knowledge. Therefore, I was thrilled to find out about various programs organized by Cornell University that allow undergraduate students to engage in research projects and collaborate with world-class scholars. For example, I expect to take part in the SPUR Summer Program and the Milstein Program in Technology & Humanity. These special opportunities will definitely stimulate my academic creativity and lead me to a road of infinite possibilities. And I firmly believe that I will fulfill my dreams at Cornell if given a chance to join this vibrant community.