As an enthusiastic math student, I believe CMU’s Department of Mathematical Sciences will be the ideal place for me to fulfill my academic goals. After careful school research, I am deeply impressed by the flexible curriculum and wide variety of math courses that enable students to explore their diverse academic interests. In particular, I am determined to take courses like 21-241: *Matrices and Linear Transformations*, 21-254: *Linear Algebra and Vector Calculus for Engineers*, and 21-369: *Numerical Methods*, etc. By taking these courses, I will establish a solid knowledge of linear transformation, matrix factorization, and linear algebra that underpin my knowledge of CNN.

In addition to acquiring advanced math knowledge at CMU, I eagerly seek opportunities to apply my theoretical knowledge to real-world practices and research projects. This profound interest was cultivated when I participated in the Space City Competition, a global academic event organized by NASA. In the Asian Regional Finals, my team used the Lagrange method to calculate the position of the perigee. To fully understand the method, I employed advanced knowledge of mathematical modeling, potential functions, and integration methods. Later, I fell for another fascinating concept of the Hidden Markov Model while reading “*The Beauty of Mathematics*.” The contents intrigued me by the Markov Model, a stochastic model used for modeling pseudo-randomly changing systems. Upon looking into this advanced concept in probability theory, I developed a profound interest in further exploring the subject by working on a research project with college professors. Therefore, I am thrilled to discover the SURF (Summer Undergraduate Research Apprenticeship) program, provided by the Carnegie Mellon Undergraduate Research Office. If given a chance to conduct my own research under the professional guidance of a CMU professor, I believe I will fully fulfill my academic pursuits and embark on a life journey of studying.

From my perspective, I value the opportunity of interdisciplinary as the most important value of a university experience. Beside from mathematics, I also enjoy learning economics, such as Business analytics. Engineering, especially Civil engineering and aerospace engineering, is also one of my favorite field of study. I find my motivation of studying a subject by combining it with different field of study. For instance, This profound interest was cultivated when I participated in the Space City Competition, a global academic event organized by NASA. In the Asian Regional Finals, my team used the Lagrange method to calculate the position of the perigee. To fully understand the method, I employed advanced knowledge of mathematical modeling, potential functions, and integration methods.

My short term goals of my life is to get into a university that truly meets my need, especially my need in interdisciplinary projects.

My mid-term aim is to participate in the global market, securing a job in investment banks. Based on my understanding to the current financial market, the trend of employment is inclining toward graduates who is informed with different fields and majors, rather than focusing on their majors. Loading myself with knowledges from different fields can significantly enhance my competence.

OR

My mid term aim is to continue researching mathematics in graduate study. After learning basic mathematics concepts, my research direction should be toward Mathematics and Finance, which can both fulfill my interest in mathematics and also financial region.

My ultimate aim is to explain everything in the universe with mathematics, also get me qualified to appreciate the beauty of Mathematics. Just as Pythagoras said, There is geometry in the humming of the strings, there is music in the spacing of the spheres. If I am able to acquire such ability, I see my college journey as successful.