**Georgia Institute of Technology**

1. Why do you want to study your chosen major specifically at Georgia Tech?\*

*(300 words max)*

I have long been determined to explore the mathematical world since childhood. The allure of its logic and precision has always captivated me. I am amazed by how a messy polynomial can be transformed into a product of several polynomials, or how the sum of an infinite geometric series can be expressed as a simple fraction And I believe Georgia Tech will be the best place to fulfill my academic goals.

Firstly, I have been aware of Georgia Tech’s excellent academic reputation in mathematics, data science, and other math-related subjects. I have actively engaged in some introductory courses of data science for its burgeoning influence. Through this experience, I gained a comprehensive understanding of data science, from data collection and classification to building convolutional neural network (CNN) models and conducting data analysis with Python programming. As I marveled at its power, my curiosity in the underlying mathematical principles was further piqued. The concentration of mathematical foundations in data science in Georgia Tech really matches my interest and it is indeed the best program of the kind. In particular, I expect to take MATH 3406: A second course in Linear Algebra, MATH 4210 Mathematical Foundations of Data Science and CS 4641: Machine Learning to explore more about mathematics and data science.

Aside from absorbing advanced knowledge at Georgia Tech, I also look forward to utilizing the abundant research resources provided for undergraduate students including taking MATH 4699. Among the esteemed scholars at Georgia Tech, I am most impressed by Associate Professor Molei Tao for his research focus on scientific machine learning, deep learning and optimal transport. I would love to learn from Professor Tao and realize my academic potential if admitted.