***Explain, in detail, an experience you've had in the past 3 to 4 years related to your first-choice major. This can be an experience from an extracurricular activity, in a class you’ve taken, or through something else. (150 words)***

During physics class, I glued my eyes to the whiteboard as my teacher explained how airplanes require thrust to generate lift and how race cars need drag to handle the corners. I was so fascinated by this topic that I decided to do my Physics Internal Assessment. I wanted to see whether different wing sizes would affect the amount of downforce produced. I dove into research journals to find out the correlation between a wing and downforce created and watched youtube channels such as Driver61 and Donut Media, which covered the topic. I made a small-scale version of a wind tunnel using my miniature car, where I measured how a specific spoiler size pushes the car downwards. This experience expanded my knowledge of how aerodynamics plays a vital role in race cars by adding downforce to produce grip while also reducing drag.

***Describe your personal and/or career goals after graduating from UIUC and how your selected first-choice major will help you achieve them. (150)***

It has always been my dream to design and build advanced Formula 1 cars. To make sure I could realize my ambition, I must learn the concepts of aerodynamics, which I could find in Mechanical Engineering. By learning the properties of moving air and the interaction between the air and the vehicle, I could understand how downforce works, which is helpful to push the cars toward the center of the earth and generate more grip. Not only that, until now, I’m curious whether or not we can create more downforce without a corresponding increase in drag. One of the ways I could solve this problem is by joining UIUC’s Formula SAE team, Illini Motorsports, where I can experiment and compete to create the ultimate Formula car and eventually lead my way to becoming an F1 engineer.

***You have selected a second-choice major. Please explain your interest in that major or your overall academic or career goals. (150)***

Systems Engineering & Design

Related to my interest in motorsport, I always want to find ways to make a car perform better in circuits. One example is installing performance parts such as a Turbo to increase the amount of air and installing high-output fuel injectors, so the engine would have more fuel and air to burn, hence more power. Though there are a lot of brands that offer aftermarket performance parts, I want to develop my brand of modification parts. It requires systems engineering and design knowledge to plan and manufacture the components. Not only produce, but I would also learn how to make these components reliable in real-life applications. Since I want my brand to be profitable, I must also practice my entrepreneurship skills. By studying this major, I can learn to manufacture automotive parts while gaining knowledge on how to sell them.