**6.  Think about an academic subject that inspires you. Describe how you have furthered this interest inside and/or outside of the classroom.**

It was my sophomore year of high school, and Extended Mathematics was finally available as a subject. Prior to this, I've only perceived mathematics as a school subject that I was good at. I was never as interested in maths as when the topic of frequency distribution was introduced. I always considered data as an individual value, but with probability distribution, data was grouped and analysed as a data set. Studying this intrigued me because I had never considered analysing multiple profiles of numerical information together could help us achieve a deeper understanding of essentially anything that could be quantified.

As a result of my new found interest, I turned every non-academic hobby I adopted to something I could place numerical values on. One example of this was when I started playing and watching Basketball, I would always be the one in the family who would constantly bring up quantitative inputs to the sport, such as field goal percentage and points scored per minute on the floor. I pictured the sport of Basketball as a game of multiple numerical profiles proving their values in a sport where the victor was determined by numbers. It turns out everything about basketball could be quantified and analysed as data, which helped me understand the sport even deeper. After exploring videos on the internet, I could finally determine a player’s ability with phrases such as “player A is in the 12% percentile in defense amongst players 25 years old or under” instead of “he’s good at defense for his age”, something that I never knew I would take a liking to. This information is significant because it can help coaches determine each individual player’s strengths and weaknesses, to help them devise a more suited training plan for every player, improving the team’s overall skill level efficiently.

Feeling good from using mathematics for my passion for basketball, I decided to pursue something more advanced and useful for the community. In the second half of my Junior year, I matched up with a peer to work on a mathematics research paper. The goal of the paper was to determine the factors that most commonly correlate to the diagnosis of heart disease. After going through multiple medical profiles that contained varying data of patients, we then sorted and analysed the data to get a mathematical model. Since there were almost 2,000 medical profiles that we had to analyse, my partner suggested that we incorporate computer programming to streamline and speed up the process of data analysis.

Due to my inexperience with computer programming, I decided to look for help. I found an expert in mathematics that was studying to obtain his PhD degree in pure mathematics. He offered to let me in on his knowledge by allowing me to shadow his research process, which involved a whole array of tools to support him. After 2 months of weekly sessions, I learned that the processes of research involved significant usage of computer software, which was something I knew I had to learn to proceed with my passion for statistics. All these experiences led me to discover that I loved exploring information in terms of numbers, which is why I plan to pursue a career that involves calculations, quantifications, and mathematical analysis.

Hey Joshua, interesting take on the mathematical field of study. I think it would be great if you brainstormed a bit on how to connect your various ideas with each other. Right now, you mentioned different aspects of mathematics that doesn’t exactly flow cohesively with each other. I can’t tell why the basketball story is significant to the interest in math, and I can’t tell if you’re highlighting the importance of skills in computer science related to mathematics or if you’re majoring in computer science. Not to mention, try to add more details when possible, especially for the peer research story, because it’s very unique but it’s not highlighted enough.

Math is such a broad subject, so try to make it more clear which aspect you’re focusing on, if for example, you’re interested in data analytics, then make the distinction obvious. You only have 350 words to make the readers understand your ambition for the major, so make sure your language is concise. Don’t make the sentences too long because it could be utilized better somewhere else. Good luck!