Chemical engineering is a field with numerous opportunities. It has a wide array of career prospects ranging from bioengineering to pharmaceuticals, conventional to alternative energy, and many more. It is a combination of subjects that requires multifaceted skill sets.

From a young age, I’ve had a wide range of interest. I’ve been playing both the piano and violin as well as participating in annual Royal ABRSM exams. I was a member of the Varsity Swim Team and the Set and Design Crew where I developed collaborative skills. I have also learned leadership through my experiences as Class Secretary and the Banquet Committee. Moreover, I actively participated in debates, such as the WSC Tournament of Champions at Yale University and MUN. However, my true passion and interest consistently points towards math and science.

As a student interested in math and sciences, I always challenged myself by participating in competitions, such as the American Mathematics Olympiad, and Science Summer Camps. The experiences gained from them enlightened me to realize the importance of both theoretical studies and practical applications of math and sciences. Throughout my academic journeys, chemical engineering has become a familiar term and, thus, started to appeal to me: it included not only the practical applications of mathematics, but also sciences, such as physics and chemistry, with a touch of economics.

Growing up as a child whose parents run a pharmaceutical company is also part of the reason for my interest in chemical engineering. My frequent visit to the manufacturing centers allowed me to witness–first-hand–the production of high purity and high efficacy pharmaceutical products from a well-designed, high yield processes. The whole design and manufacturing process piqued my curiosity. It aspired me to design such a process and to, one day, being able to run my own pharmaceutical company.

Enrolling in a summer science program at Johns Hopkins University during my sophomore year was my initial step. I explored the art of sciences and gained experience of working in the lab: I learnt how to deal with the academic and theoretical aspects of processes, which formed the basis of my future goals. The following summer, I participated in other programs to further explore my career path in chemical engineering. During this program, I attended several classes that would aid in my future studies as a chemical engineer: introductory courses in material balances, process optimization, and statistical process control.

I then started and designed a personal project using these knowledge: a small hygienic product business called Eurelia Co. The idea was inspired from my volunteering live-in and service trip experiences to several areas in Indonesia that lacked proper hygienic facilities, especially their shortages in hygienic products. Thus, Eurelia Co.’s mission is to educate the Indonesian people on the importance of natural hygienic products and fulfill the basic human rights to sanitation by donating hygienic products towards the people in need. Surveys were utilized to gain collective inputs in designing Eurelia Co.’s concepts. Extensive research was also performed via trial-and-error to formulate Eurelia Co.’s products: hand-sanitizers and soaps. I made sure that our products are natural-based products beneficial for the skin.

As a determined and self-motivated person, I strived to pursue a course that was able to challenge me and fit my passion. Math and sciences are the subjects that I enjoyed the most, particularly their practical applications. My experiences in the past few years have not only confirmed my conviction to study chemical engineering, but also drives me to develop the required engineering skill sets. Therefore, I intend to pursue a degree in chemical engineering and continue my higher education further to graduate school with the goal of pursuing my dreams: excelling in the field and starting a pharmaceutical company.

Hey! It’s great to see that you did a lot of activities during high school, that being said, I think it’s fine to just note down the activities specific to biochemistry and pharmaceuticals in this essay. The admission officer will read your resume, so writing down too much experiences would only make the essay less focused. Keeping in mind the essay’s going over the word limit, it would be a great idea to cut the details that isn’t really necessary for the focus of the essay.

One of the things I read that I was really interested in was the Eurelia Co, you made. Unfortunately, it was only discussed in a single paragraph. The biggest thing you’d like to show the admissions officers is the things you learned and how these experiences would translate as a student of the university. Aside from showing the technical skills you have, which will be obvious also from your grades or academic awards, it would also be great if you could show aspects of a scientist that you learned from Eurelia Co. for example. Maybe during your trial and error research in formulating the hand sanitizer, you realized the importance of resilience and open-mindedness? There are various highly valued applicants to the university, how do you distinguish yourself? How do you want to be known when the admission officer has to vouch for you?

While I can see the amount of things you’ve committed to, I think it would strengthen the essay to see you speak in a bit more detail in some of them. Instead of looking to quantify all your achievements, maybe be more elaborate and discuss some of the challenges or lessons you learned from this. Not just in learning the optimization process of yielding chemical pills for example, but also how the lab showed the importance of detailed skills because a single error in measurements could render the entire experiment a failure, for example.

I think it’s great to include the fact that you realized the importance of theoretical knowledge and application, and then included how you received technical experience and then applied it to your business. But I see the words “theoretical studies and practical applications of math and science” quite a lot, and keep in mind that the college admission essay reads thousands of essays and spend maybe 5~6 minutes on each application. You want to catch his attention by citing your strengths instead of only listing your achievements. I’m looking forward to see how you personalize the essay even more. Not only that, it would be great to see how the experiences in the summer programs or Eurelia helped you grow as an aspiring scientist, a learner, and a person.