**Personal Statement (4000 characters)**

If I was allowed to solve one of the leading problems occurring in the world today, I will undoubtedly choose water security. Therefore, I decided to create and implement a water filter in Kei Island, a remote island in Maluku, Indonesia. While I’ve improved their collected-water quality, it didn’t really improve the residents’ water access; they still have to travel for miles to collect fresh water.

Hence, I decided to develop an app prototype that limits users' excessive water usage for one of my competitions. As I was developing the app, I became aware of the significance of data quality on the app’s accuracy. Without reliable data input, information such as water quality would only be judged by the naked eye. This motivates me to pursue data science.

Thus, I joined a Data Science Bootcamp to learn to properly apply algorithms to clean, sort, analyze, and interpret big data. Being in the Bootcamp exposed me to the field of data science as I got to experience being a data scientist. I then decided to participate in a work experience program for computational science. Here, I participated in workshops to hone my technical and soft skills, which I subsequently applied to provide a modification function in an ordering website which will allow customers to enter their allergies or dietary restrictions when buying. I also analyzed the amount of profits, operating costs, and the amount of each menu sold to accurately predict the amount of ingredients needed to be bought for the upcoming month. These were used to offer a solution for an outdated ordering system issue that was brought up by Devon café, an eatery with a Sydney, Australia, license that operates in Jakarta, Indonesia.

At this point, I was astounded by how important data science is across society, not just in the corporate world. This fuels my desire to continue improving my analytical abilities. So, I decided to get in touch with my bootcamp mentor, who provided me with raw datasets consisting of a startup logistics company’s health check data of its employees during the pandemic.I cleaned the data and divided it into two groups: those who contracted COVID-19 and those who did not. Then, among other things, I looked at the estimated length of their illness, its severity, and the medications they took. In the end, I came to conclusions, such as the fact that employees in the marketing division are 50% more likely to contract COVID-19 than those in the accounting department due to the higher level of human interaction.

Along with developing my data science abilities, I concentrated on strengthening my math abilities because math is the fundamental foundation of data science. Thus, I challenged myself by participating in math competitions in which I received awards for the American Mathematics Olympiad, the Singapore and Asian Maths Olympiad, and the SINGA Maths Global Finals. These competitions taught me that in-depth concept analysis is key to a deeper understanding of the topic. To analyze means to fully understand, allowing flexibility when applying ideas and information to statistical models. My understanding of math concepts aids in the implementation of algorithm development and pattern identification.

Eventually, I was able to sort the data from several sources, extract relevant information, and incorporate them into my app. Moreover, I distributed a questionnaire to analyze which features of the app are essential for further insights.

Through all these experiences, I learned firsthand that besides analyzing current trends and behaviors, data also helps predict future trends. A bachelor’s degree in data science would allow me to develop my data analysis, visualization, and programming skills for algorithms and running time analysis. This realization confirms my interest to study data science in university.

Afterwards, I would love the opportunity to be able to work as a data scientist in the areas of improving water accessibility. I envision incorporating data integration and live water monitoring into a freely-accessible water safety map to guide people in monitoring and learning more about water conditions around them. Aside from that, I would also start a non-profit organization aimed at facilitating the availability of clean water in rural areas.