1. REQUIRED: The statement of purpose will provide an opportunity to explain any extenuating circumstances that you feel could add value to your application. You may also want to explain unique aspects of your academic background or valued experiences you may have had that relate to your academic discipline. The statement of purpose is not meant to be a listing of accomplishments in high school or a record of your participation in school-related activities. Rather, this is your opportunity to address the admissions committee directly and to let us know more about you as an individual, in a manner that your transcripts and other application information cannot convey. (500-750 words)

The ten-year old me sat quietly in the corner of the dining room, staring blankly at my outmoded PC screen. I was designing an NXT program using a light sensor to park a Lego car between obstacles. The programming process was unbelievably complex, and all of my simulation tests had failed. After adjusting the starting position, I pressed execute and the car began rolling forward. But seconds later, the car veered off course, bumped the obstacle, and demolished its back wheel. My frustration became anger. “Why doesn’t it work?!” I screamed.

The outburst prompted my father to enter the dining room. He sat down beside me, concerned. He took the pieces from my sweaty palms and encouraged me to persevere and finish what I started.

Looking at his gentle face and rough hands reminded me of the various setbacks my father had gone through. He got laid off, went bankrupt, and had to support his family on his own. He did not stop trying, and I won’t too. I analyzed my NXT program once again. I got an idea! Perhaps, if I program the robot to stop beside the obstacle then retreating afterwards, the car will manage to just avoid the obstacles than if I were turning it forward 45 degrees in between them. I followed my thought process and designed the new program. As I began the next test, a thrill shot through my body. Nailed it!

It was my first encounter with the engineering field, and I got addicted. I wondered, “*Can I build something real? Something that is actually useful?”* I imagined innovating systematic programs and automating all kinds of machines: from inventing a vacuum capable of collecting hair before it falls to the ground to covering our clothesline before a rainstorm. It seemed like a long shot, but I was determined to complete my journey.

As I looked for more opportunities throughout my high school, I came across an electrical engineering workshop held by Pelita Harapan University that sparked my desire to develop sustainable energy sources. The dean showed a pie chart depicting daily energy consumption within Indonesian households. Smartphones, televisions, and electronic devices dominated the chart. After viewing this chart, I felt motivated to use my engineering skills to address energy consumption in Indonesia. I constructed a prototype circuit capable of generating hybrid electricity by converting wind energy and water. Despite being the youngest participant in the workshop, I stayed the longest, researching the cheapest way to make household appliances consume five times less energy than they do today.

Inside me lies the burning desire to develop a pathway to combat the global issue of depleting non-renewable energy resources. With years spent polishing my knowledge about the automation industry and robotics, I am passionate about using innovative systems and engineering methods to create energy-efficient household appliances and transportation.

Determined to expand my abilities, I interned at PT. Swissplast Industries — an Indonesian-based plastic producer. My responsibilities included managing the control panel of the machinery section and coding a C-language program to detect defective food plastic wrap. In addition, I assigned myself a personal task: reduce the machinery’s energy usage. Frequently, my coworkers used conventional forklifts to transport bundles of plastic to the warehouse. I wanted to change the system to save both time and electricity, so I designed an automated-wheeled machinery system that could perform the same task eight minutes quicker. The whole process instilled me with optimism and greater ambition to specialize in the areas of control systems and low-energy-consuming production.

Participating in many of these cognitive activities have shaped my desire to reduce the energy consumption in my country. However, the thirst of wanting to experience more insisted me to deepen my exploration in electrical engineering. Zooming out the magnification, I hope to be a part of the breakthroughs in the study of Energy and Power at Texas A&M University.