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 wheels. 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 retreat afterwards, the car will manage to just avoid the obstacles than if I were to turn 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 perhaps my first trial-and-error experiment that made eye 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 an automated canopy to cover an outdoor clothing hanger before a rainstorm starts pouring. Trivial yet one of a long shot, I was determined to complete my journey.

As I looked for more opportunities in 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 it, I felt motivated to use my engineering thinking cap 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 most cost-efficient way to make household appliances draw 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 on the automation industry and robotics, I am passionate about the innovative application of systems and engineering methods to create energy-saving household appliances and transportation.

Determined to expand my technical know-hows, I interned at PT. Swissplast Industries — a prominent, Indonesian-based plastic producer. My responsibilities included managing the control panel of the machinery section and coding a C-language program to detect defects on their food plastic wrap product. In addition, I assigned myself a personal task: reducing energy usage within the company’s processes. Observing my coworkers using conventional forklifts to transport bundles of plastic to the warehouse was a common sight. With an automated, wheeled-vehicle designed in my mind, I was able to realize that model into reality such that the same task could be performed 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 workflows.

Participating in many of these cognitive activities have shaped my desire to design sustainable, energy-efficient models for my home country. Be it on a household or corporate level, the thirst of wanting to achieve this goal has compelled me to deepen my exploration in electrical engineering – in particular through reading Energy and Power at Texas A&M University.

*Hi Michael!*

*I think this essay addresses most parts of the prompt, so well done!*

*Just two quick pointers up there that would hopefully be beneficial for finalizing this piece of yours. Thanks!*

*- Matthew*