\*How will opportunities at Purdue support your interests, both in and out of the classroom? (max 10 words.)

The concept of improvement from manipulation at the nanoscale fascinates me: something could be influenced from such miniscule changes. I wish to research nanotechnology at Purdue’s Birck Nanotechnology Center. Specifically, researching nanoelectronics with Professor Yong Chen would allow me to contribute to his interdisciplinary Quantum Matter and Devices Group and collaborate with students from other disciplines such as AAE. Additionally, I hope to be involved with Purdue’s Cadenza Piano Club to pursue my passion in music. Organizations such as Purdue Music Producers would provide me opportunities to cover a wider range of musical aspects whilst networking with like-minded individuals. *99 words*

\*Briefly discuss your reasons for pursuing the major you have selected. (max 100 words)

Growing up exposed to the oil industry, I have grown fascinated by the role of engineering in sustainability. Through a B.S. in ECE, I strive to expand my knowledge in these fields, which I believe is integral for the development of better technologies, specifically renewable energy, to support the needs of today and future generations. Additionally, my interest in engineering also lies in agriculture after researching the impact of the Internet of Things in food and water shortage. Purdue will fuel my interdisciplinary interests stemming from my curiosity about connections between sustainability and the computational systems around me. *99 words*

Please briefly elaborate on one of your extracurricular activities or work experiences. (max 250) (optional essay)

As I grasped the edge of my seat in anticipation, I watched eagerly to see if the protagonist made it out of the perilous oilrig alive. Deepwater Horizon, what I once only viewed as a movie I craved to watch for the thrill, has now helped me discover the progress of technology.

Last summer, I took on an internship at Petroleum Development Oman, learning about drilling operations and processes involved in the procedure of oil extraction. An incident I was tasked to investigate was the Deepwater Horizon oil spill. As I started researching, I realised that there was so much more to the incident than just leaks and explosions, as per the 2010 dramatization. It was surreal to learn about the disaster in a more professional perspective with an expert in the field.

I evaluated the causes of the spill with my mentor, including a faulty blowout preventor (BOP) and failed cement sealing. I learned about the functions of those machines and about the changes made after the incident. The BOP is equipped with a sheer ram that cuts the pipe to shut off the flow of oil and gas in the event of an emergency or leak. Today, BOPs are equipped with more powerful shears that are capable of cutting the pipe even when subjected to extremely high water pressures. Exploring newer designs of safer and more efficient use, this experience helped to reveal the development of technology and how we as humans learn and improve from past mistakes. *250 words*