**In the past 3 to 4 years, what experience(s) have you had (inside or outside of the classroom) related to your selected first-choice major or academic interest? (150 words)**

The downfall of the petroleum industry had upended my childhood home, Brunei, stressing to me the imminence of the rise of sustainable energy.

My drive to find a feasible form of renewable penetration to the grid led me to investigate the benefits of ‘smart grid’ technology on the efficiency and sustainability of the power grid within my school research paper. I dove into the potential of integrating new innovations such as the smart meter and high energy-density supercapacitors into our current fossil-fuel powered electrical grids, which sparked my curiosity in implementing such technologies in Indonesia.

I continued my smart grid endeavor by pursuing an internship at a local Indonesian electrical consulting company. While simulating a microgrid for Keban, a rural Indonesian island, I realized that the cost of electricity is often lower when variable renewable energy is being penetrated into the grid, which to me is an optimistic indicator of the efficacy of renewable penetration on the sustainability of the smart grid.

**How does your selected first-choice major relate to your future career goals?  (150 words)**

During my internship at a local Indonesian electrical company, I learned that the heavily coal-reliant country had set a goal to achieve 31% renewable penetration into the electrical grid by 2050. However, compared to other countries’ goal to achieve net zero carbon emissions by the same year, I believe that Indonesia can set more ambitious goals. I want to help my home country achieve this by increasing smart systems in their electrical grid.

To work towards this goal, UIUC’s ECE 333 course would enable me to look into the possibility of fuel cell power plants as an alternative to existing renewable sources. Using my knowledge from this course, I hope to contribute to the Illinois Center for a Smarter Electric Grid, where I can look into the feasibility of integrating smart technology into an existing grid made for fossil-fuels. This would act as a small model of what I hope to achieve in Indonesia- implementing smart systems in the grid. To complement this, I look forward to working under Professor Pilawa-Podgurski on the potential of integrating electric vehicles as an energy storage system in the grid.