*A hallmark of the Columbia experience is being able to learn and live in a community with a wide range of perspectives. How do you or would you learn from and contribute to diverse, collaborative communities? (200 words or fewer)*

“Hips 40 degrees to the vertical; fingers quaver ever so slightly to show off my gold fingertips”. This was the mantra I repeated at minute 2:32 of our dance. Every year, together with the girls in the close-knitted Indonesian community in Brunei, I would share one of my country’s many traditional dances on the one day where we could truly show off our culture to my diverse school: International Day. Unlike previous years where we performed a Papuan dance, this year, I had chosen one from Lampung so as to not limit my knowledge of the vast Indonesian culture to that of one island. However, this meant that the powerful, sharp movements of Papua had to be replaced with the delicate movements of Lampung which I wasn’t accustomed to. Nonetheless, my desire to share my mother’s traditional dance with my school meant that every Tuesday, my goal was to not only teach myself, but also help the other girls achieve the dainty, effortless Lampung movements.

I hope to continue sharing Indonesia’s traditional dances at Columbia. At Indonesian student conventions, I hope to provide an additional insight to other students learning Indonesian dances, whether it be dynamic like that of Papua or graceful like that of Lampung.

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*Why are you interested in attending Columbia University? We encourage you to consider the aspect(s) that you find unique and compelling about Columbia. (200 words or fewer)*

I believe that the technological improvements of electrical grids could play a major part in transforming our fossil-fuel-driven world. To play my part, I hope to focus my Electrical Engineering major on ‘Smart Electrical Energy’ at Columbia. Wallowed into research on technology to enhance renewable penetration in the grid, I stumbled upon Dr. Roger Anderson’s research, *Smart Grid The Future of the Electric Energy System*, where I appreciated his findings on the potential of implementing IoT to increase grid reliability and cybersecurity. To further explore this concept, I look forward to taking Professor Xiaofan Jiang’s class on IoT: Intelligent and Connected Systems, where I hope to delve deeper into the mechanism behind device-to-device communication. This will give me a better understanding on the feasibility of implementing a bidirectional electrical flow in the grid as part of the smart grid. Having received a grant to modernize grid systems, I don’t doubt that Columbia is dedicated to creating a more sustainable grid. With a shared desire to optimize energy systems through smart innovations, I am eager to join Columbia’s drive to shift to a less fossil-fuel reliant grid.

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*For applicants to Columbia Engineering, please tell us what from your current and past experiences (either academic or personal) attracts you specifically to the areas of study that you previously noted in the application. (200 words or fewer)*

After the oil price plunged in 2016, I revisited my childhood home, Brunei, and witnessed the once vibrant orange donkey pump now rusty and stagnant. The downfall of petroleum had upended a country's social setting, and at this point, I knew that it was time for the rise of a new form of energy: 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 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.

As a result, I continued my smart grid endeavor by pursuing an internship at a local Indonesian electrical consulting company. While simulating a microgrid for 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.