Describe the unique qualities that attract you to the specific undergraduate College or School (including preferred admission and dual degree programs) to which you are applying at the University of Michigan. How would that curriculum support your interests? (550 words)

*A malfunctioning ammonia sensor and automatic faeces cleaner*: the farm figured it out too little too late. Not until after several batches of chickens contracted diseases making them *unfit* for the food industry and leaving my parents’ poultry farm in a huge deficit.

I was stunned by how a single pair of equipment malfunction could cause a large-scale setback. Scouring the web to gain insights on supply chain, logistics, and operations, I came across industrial engineers: those who perform failure analysis and optimize manufacturing processes using math; it captivated me.

Indonesia’s demand for chicken per person per year has increased by roughly 70% between 2010 and 2019, and will continue to grow. This leads to the high value potential of poultry farms to become one of the fastest growing industries in Indonesia. As a result, the use of smart technologies in the operations of the poultry industry, such as feeding and storage, have become increasingly more important. As I delved deeper into this topic, I have discovered that automated farms are relatively new to the poultry industry in Indonesia, and not many companies have embraced fully automated farms and are still highly dependent on manual labor. Therefore, I believe that fully automated poultry farms will become the next breakthrough practice and, eventually, become the cornerstone of Indonesia’s poultry industry.

I intend to take advantage of this emerging field and prepare ahead of time by learning the necessary engineering methods, skills, and state-of-the-art manufacturing tools, such as quality control and assurance engineering, process optimization, simulation, and project management, through industrial and operations engineering. In addition, my vision is to be able to introduce the Indonesian poultry farms to the new cutting-edge technology and innovations that I will learn throughout college to help me in my career to boost productivity, growth and profitability, and gain advantage over competition.

University of Michigan’s Industrial and Operations Engineering curriculum would further my dream to integrate technology into Indonesia’s poultry industry, increase the Indonesian citizens’ prosperity by making chicken meat much more affordable to the citizens of Indonesia, and, simultaneously, scale-up my parents’ farm through effective optimization methods of integrated systems. Learning Operations Research would provide me with advanced methods about predicting and optimizing system performances, as well as using statistics and computation to create data-driven models to tackle real life industrial engineering problems, such as the effectivity of design and optimization in farms, while Entrepreneur course would enhance my ability to turn creativity, and innovation into profit, as well as dealing with adversity in businesses. I also hope to collaborate with Professor Raed Al Kontar in his research on Quality and Applied Statistics and analytics. I am particularly interested in his research on data analytics for smart and connected systems, as I believe he could help inspire me to implement smart data analytics to poultry farms.

At the Data Science Lab, I hope to be involved in cutting-edge research, meet fellow future engineers, and learn from various experts that would certainly broaden my horizon.

The Wolverines’ collaborative community would support me to build, think, and pave the way for a bright future unbound by limitations. My experience as a Wolverine would enable me to build essential manufacturing practices, minimize operations error, and scale-up the farm.