*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*

As a kid who loves cars and aims to preserve the environment, I am confident that the current pace of technological advancement could benefit the environment via improved efficiency: electric vehicles (EV) are one of them. I want to major in Electrical Engineering and explore interdisciplinary programs at UMich because I believe that sustainability is a realistic approach for preserving the earth's natural resources.

One of my dreams is to develop efficient EV powertrains, which I believe have the potential to be a game-changer because it can reduce energy consumption, thus leading to lower carbon footprint. As such, the Automotive Research Center at UMich’s Walter E. Lay Automotive laboratory is something I really look forward to. Its facilities and Prof. Heath Hofmann’s work on novel-high performance powertrain would enable me to develop core competencies in electromechanical systems, which will help me with the development of high-efficiency electric powertrains. Moreover, UMich’s “Electric Machinery and Drives” and “Electrical Engineering Systems Design” courses would further aid me in developing, testing, and prototyping the design of electrical systems: the main building blocks that enable the basic functionality of EV. Through this gained knowledge, my hope is to be able to start an EV powertrain specialty parts manufacturing in Indonesia with the end goal of starting a fully functional end-to-end EV manufacturing company.

In addition, UMich’s Summer Undergraduate Research in Engineering (SURE) will prepare and equip me with exciting research internships. I hope to work on numerous interesting research projects under Professor Bogdan Epureanu, who specializes in automotive structures to widen my knowledge on autonomous vehicles. SURE’s ME Project #5 - Immersive Environment for Autonomous Vehicles using Unreal Engine Simulations  - is a program that could only be found at UMich, and this will enable me to enhance the physical and theoretical understanding of vehicle designs. In addition, SURE is a great place to sharpen my engineering skills on real-world application. For instance, this will give me fundamental knowledge in implementing the autonomous system of the EV I plan to build.

Besides engineering skills and knowledge, I strongly believe that innovation is possible when it is coupled with entrepreneurial knowledge because it allows one to create a balance between technological advancement, raw material supplies and management, and market fit. UMich’s Center for Entrepreneurship allows me to do just that - exposing me to the basic entrepreneurial skills like financial modeling, business sustainability, and market research. The “Business Entrepreneurship in Thought and Action” course will also advance my skills in analyzing an actual business situation. Because of this, I also plan to pursue a minor in business.

Furthermore, UMich will also help me pursue a multitude of activities through the Wilson Student Team Project Center, which offers varying clubs related to my interest. I felt an immediate connection with clubs such as Michigan Electric Racing, Supermileage, and Solar Car where I can challenge myself and at the same time build my engineering skills.

With a good mix of electrical engineering and entrepreneurship courses as well as UMich’s one of a kind programs and facilities, I am confident that UMich is the perfect institution in supporting my ambition to create my own electric vehicle company in Indonesia.