My early academic life was a series of unceremonious events as I rode the uncertain waves that took me from one harbour to another. I was by no means lacking in my studies, but I had never broken through to the realm of exception. I performed satisfactorily in my high school but did not have a passion or area of expertise to build upon. So, much like my prior experiences, when I received the opportunity to enrol in Biomedical Engineering at Zhejiang University, the prestige of both the subject and the institute captivated my interest enough for me to begin my university life in this discipline.

Initially, my perception of Biomedical Engineering was for medicine to be at the centre of the curriculum. Yet, soon I found myself grappling with an interdisciplinary field that combined medicine, circuitry, and informatics. The fields seemed so distant and incoherent that I could not see how they could work together to create meaningful systems. As such, I approached it with the same aimlessness, completing my coursework without understanding its broader significance. The turning point came in my sophomore year when, at the suggestion of a roommate, I joined a professor's lab to participate in research related to nuclear magnetic resonance. Working alongside my mentor and peers, I learned how to collect and analyse data, assess errors, and draw meaningful conclusions. By the end of my junior year, I had completed the project and co-authored my first academic article. This milestone was a confidence booster and sparked my interest in research, but I still struggled to connect my work with the broader possibilities of interdisciplinary engineering.

That changed when I was in my senior year and working on my graduation thesis. A mentor introduced me to a potential area of research -Biocomputing where I learned that researchers were exploring the use of physiological indicators as inputs for logic systems, developing setups that generate feedback and enable microsystems to respond dynamically. This concept intrigued me as it bridged the gap between biological systems and electronic logic—a connection I had previously struggled to envision. Motivated by this idea, I collaborated with a doctoral student to explore the construction of logic circuits using microsystems. The project posed significant challenges due to the lack of reference material in the field and my limited technical expertise at the time. While I successfully implemented basic ideas, my efforts were hindered by technical constraints and the complexity of maintaining system stability when using physiological data as inputs. Drawing on my past experience developing temperature measurement systems, I recognized the susceptibility of basic systems to external signal interference and the critical need for stability to ensure accurate outputs. Despite these challenges, the project taught me the importance of combining theoretical knowledge with practical problem-solving skills and solidified my desire to address these limitations through advanced study.

The experience I had toward the end of my undergraduate degree also led me to reflect on the broader implication of my studies in Biomedical Engineering. While the degree had introduced me to diverse disciplines, it was my hands-on research experience in electronics, and by extension, electrical systems that stood out and instilled a sense of purpose. In fact, while my graduation thesis received positive feedback and excellent grades, I was acutely aware that my work only scratched the surface of what was possible. The project's potential for innovation and practical applications remained largely untapped due to my limited expertise, particularly in integrated circuits. This realization reinforced my desire to pursue further studies in electrical engineering, a field that encompassed integrated circuits as well as electronic systems, power systems, and much more, for it aligned closely with my aspirations to develop more complex and application-oriented systems.

As such, now at a critical juncture in my academic journey, I have decided to pivot, from my background in biomedical engineering and pursue electrical engineering at the National University of Singapore. The decision comes on the back of my background in interdisciplinary engineering and my interest, capability, and experience in the areas relevant to electronics and electrical systems. Though not extensive, I believe my insight in these areas are adequate to help me navigate the challenges at the graduate level and build on my existing knowledge base.

I find the Master of Science in Electrical Engineering at the National University of Singapore to possess the kind of introductory and interdisciplinary modules concerning electrical engineering. The fact that the programme is open to people from different engineering backgrounds narrows it down in my list of ideal destinations. Similarly, the course content covering a wide breadth of subjects in electrical and electronics engineering marks it a cut above than other programs for interdisciplinary students. Especially, when considering that my move to electrical engineering was inspired by my desire to become a semiconductor engineer, following my undergraduate thesis project and work as a research assistant. Hence, I needed to pursue systematic learning in both electrical and electronics engineering. NUS's focus on the electronics department through specialisation like Nanoelectronics singularly highlights it as my ideal choice while the opportunity to pivot to a degree in Master of Semiconductor Technology and Operations offers a sense of security and commendable prospects for the future. Courses like EE5508 Semiconductor Fundamentals and EE5434 Micro/Nano Electromechanical Systems will help facilitate a smooth transfer to semiconductor engineering, while electives like EE5507 Analog Integrated Circuit Design and EE5518 VLSI Digital Circuit Design will address my gaps in areas of integrated circuits.

Additionally, I am looking forward to building my portfolio through the MSc project course. Since my passion for electrical engineering was kindled by research work, I aim to replicate a similar progress in my Master's studies. My current goal is to integrate my background in Biocomputing and semiconductor design to realize my vision of creating a biochip. The course project can be a great platform to test the viability of my idea. Hence, when all things are considered, the Master of Science in Electrical Engineering at National University of Singapore will not only allow me to make an interdisciplinary transition but also build my expertise in semiconductor engineering and potentially specialise in the discipline with another degree down the line. Ultimately, though the contents of the programme are different from what I have studied in my undergraduate years, I see the Master's programme at NUS as a new learning opportunity that will broaden the horizons of a potential researcher like myself. Coupled with the faculty at NUS whose guidance will greatly help my research efforts, I can use my background as a unique strength in contributing to breakthroughs in Biocomputing.

Looking back, my journey from uncertainty to focused ambition has been shaped by both challenges and opportunities. My research experience has made me a decisive student who values exploration, collaboration, and practical problem-solving. I am confident that my background in Biomedical Engineering, coupled with my passion for interdisciplinary innovation, positions me well to succeed in your electrical engineering program. I look forward to continuing my academic journey, building upon my experiences, and contributing to the cutting-edge advancements that define this dynamic field.