**Personal statement**

Both maths and physics were two of my favorite subjects. I was really interested in counting simple numbers. Numbers are my ultimate thinking. I was really interested when it comes to any problems involving numbers which made me solely consider math my favorite subject. When it comes to physics, my interest comes from astronomy. The fate of our Earth in the future, the age of the universe, life beyond Earth and many other celestial events also motivates me to find out in astronomy.

One of my huge achievements is my personal project. I was chosen to select any topic that is highly challenging by demonstrating my huge learning throughout middle school. One topic I thought of is a rover that can move by itself without assisting. Making a self-moving rover is one of the challenges I’ve ever conducted. The rover I made is approximately the size of a textbook and is made out of robotic tools and involves a lot of coding. The coding application I used was “arduino”. It was able to even lift light objects such as a piece of wrapped tissue. Humanity broughts me a huge desire to expand on other planets in the Solar System. Another achievement I’ve made is my extended essay. I created a report about any topic I demonstrated my learning in high school. I investigated the relationship between the luminosity of the star and the goldilocks zone in the solar system. A goldilocks zone is a region where a planet is not too hot or not too cold for water to exist which can sustain life. The Sun will one day die out and will expand. Earth will be engulfed by the Sun whereas other planets in the outer system will be habitable. I was able to investigate which planets will be habitable in the far future when the Sun expands. The square root relationship between the goldilocks zone and the luminosity of the Sun helps me calculate how far from the distance from the other star is habitable. The luminosity of the Sun determines how much power the Sun radiates into space; it does not determine how hot the Sun will be. Doing research was really challenging as I had to search for any trends that relate with the luminosity of the Sun to see whether there is any change in the habitable zone in the future. These projects led me to have a huge interest in astronomy.

 Joining the World Mathematics Competition (WMI) is one of my opportunistic achievements I participated in this competition in 2018 and 2019. It comprised the preliminary and final round. The preliminary round of both 2018 and 2019 was done in Jakarta, Indonesia. The final round in 2018 occurred in Seoul, South Korea while it occurred in Fukuoka, Japan in 2019. I managed to get a bronze medal (top 30% of the participants) in both of the preliminary rounds and due to that, I moved on to the final round for two consecutive years. I also got bronze medals in both of the final rounds showing that I have a huge interest in mathematics in the future. Approximately 20,000 people had participated throughout the competition every year. Preparing the competition was easy and quick. All I had to do was to do some past papers because the problems in it involve similar concepts. Some questions are critical for me to think such as topics involve higher grade levels such as logarithms and polynomial functions which requires further time for me to solve. Apart from that, I managed to do everything by myself daily in order to finish all of the past papers.

I also attended maths and sciences ICAS. Accomplishing a distinction certificate each year motivates me strongly into maths and sciences. I was really proud to become a top 10% in maths and sciences and is the reason I was able to achieve a distinction certificate every year. ICAS helps me to demonstrate my understanding in both of the subjects. Being one of the top scorers in mathematical literacy in ISA each year during grades 3-10 further motivates my interest in mathematics with an average score of more than 800 points. By showing a huge achievement in maths and sciences, I was selected as one of the students in STEM honour class in grade 10. Only 6 out of 100 students in my badge were selected. Some of the advanced topics that were taught include kinematics, trigonometry or motion twice a week. Preparing the competition was relatively easy as I only needed to spend around 1 hour per day. I did not find any difficulties preparing for my test because most of the questions do not involve complex workings. As I reviewed the test, I even asked some teachers to provide additional papers. This went fluent only if there were no school assessments. School assessments sometimes led me to sacrifice my time to do the tests as I usually postpone it all the way at night. In order to avoid this, I spent some time in the morning after I woke up to study both ICAS and ISA to keep my momentum. I was able to finish all of the questions confidently and I even rechecked my work before submitting to the teacher.

All of these achievements deduce why I am really interested in mechanical and electrical engineering, particularly that relates to astronomy. I wanted to expand further knowledge about maths and physics as I wanted to brainstorm and make a product that will benefit everyone in the future. Participating in guided projects will really help me to prepare a product that will benefit everyone in the society. Both mechanical and electrical engineering have led me to be really motivated to develop new solutions to everyday problems. I have decided to apply to University of ……… because of its strong academic reputation on mechanical and electrical engineering.