Since early childhood, the machines that can reason, think, and behave as human beings, known as robots, have enthralled me. It feels infallible that I have committed myself to robotics. The fact that it is an amalgamation of nearly all fields from ecology to music to astronomy makes robotics even more awe-inspiring to me. I strongly believe developing futuristic robots will improve the quality of research happening in space and extraterrestrial areas. Moreover, this desire of being a part of this revolution, to collectively tackle the challenge of imparting intelligence to machines has motivated me to opt for a career in Space Robotics and Artificial Intelligence. I aim to take up an exacting position, either in the academia or in the industry, where I can conduct research and development work and create new standards in an autonomous space robotics domain. Hence, in order to fulfill this objective, I intend to pursue a Master of Applied Science Program in Aerospace Science and Engineering from your University.

I believe that a career in robotics first requires a deep love and passion for robots. Since early childhood, I was fascinated with toys and was always eager to know how they actually work, and over the years, this infatuation has been nurtured and developed into a thirst. This motivated me to join Mechanical Engineering at RCET, Anna University, so that I could increase the level of my technical imagination. During this period, I had the opportunity to become familiar with hardcore courses in my field of interest, namely Robotics and Mechatronics. These served as the gateway to several important theoretical concepts that form the framework of conceptualizing and developing useful robots. Apart from these, I enjoyed learning about Kinematics of Machines, Theory of Machines, and Hydraulic and Pneumatic Systems. In order to understand theoretical concepts better, it is important to apply them practically, and I got this opportunity through my practical courses on CAD, Machine Design, Hydraulic and Pneumatic Systems, and Manufacturing and Microprocessors.

My main motivation for studying Mechanical Engineering was to peruse my passion for robotics and to raise the horizon of my technical imagination, and this course being a core engineering of machines and mechanisms taught me the perfect prerequisite needed for robotics. Hence, for my final year undergraduate project, I undertook the design and fabrication of a tactical category robot for research and reconnaissance purpose known as TCWAAR, which is mainly used to assist humans in hazardous situations and in military purposes such as rescue and surveillance for people stranded in a remote area. It had a well-built kinematic structure for locomotion with tracked chain wheel system for better traction and it could climb up to 60 degrees steep. The robot was also integrated with two robotic arms and a cosmos camera for exploration and object detection. After execution of this project, I made a breakthrough in creating a novel design to develop another exploration rover which I presented in International Astronautical Congress held at Bremen. This project, in addition to loading me with technical expertise, also honed my innovative and out-of-the-box thinking skills, and helped me break into the domain of designing and developing specifically purposed robots.

Apart from these, during my academic tenure, I have worked on nearly ten working robotic prototypes and exhibited them in project expos conducted at the national level. Some of these are a humanoid robot for defense, an axis-robot arm for industrial purpose, a multipurpose industrial robot, rover for the extra-terrestrial surface, a dual hand-assembly robot for industrial purpose, a lunar surface explorer and analyzer, and a three-axis robotics arm for industrial purpose. A couple of months back, I developed a prehensile robotic arm (humanoid structure) controlled by a single gear motor with DPDT switch, which is agile in response and competent of holding objects with dissimilar shapes. I am currently into research and development of biped legged (humanoid) robot, a rover with environment

adaptable locomotive system for the extra-terrestrial area, a VTOL-assisted robot, and a guitar playing a robot with artificial intelligence. With each one of these projects, I have moved one step closer to achieving perfection in my knowledge and skills and I felt my efforts were acknowledged when a Leading Tamil daily newspaper (Dinamalar) published an article titled “Robovin Brammakkal (CREATOR OF ROBOT)” briefing about my achievements.

During the course of my undergraduate studies, I had an opportunity to work as an intern at RenSolar Energy Solutions, as part of the design team. My prototype development skills helped me design a solar light tracking system, and I went on to fabricate a real solar tracking panel and installed it at the client’s location. Through this experience, I had the chance to work on my raw fabrication skills and my work was well appreciated by the engineering team.

Mechanical Engineering not only provided me with a sound base of theoretical concepts such as mechanical modeling and mechanisms, but it also gave me the opportunities to implement them in real life, especially during my prototype development, and during working tenure as a Mechanical Engineer at RenSolar, Blackpearl, and Continental. In the last four years, I have gained exceptional work experience and excellent communication and teamwork skills through my various work projects. In addition, the most remarkable thing during my work at Continental was that I led an Innovation Team and contributed as an Ambassador for the Innovative Community. As a member of this team, I have developed an ultrasonic sensor, which after further development will be registered for a patent. In due course, I was nominated as Engineer of the Month for providing an innovative solution for HMC project, which was eventually awarded by the customer too. Also, to improvise my leadership skills, I was earmarked for Leadership Development Programme among my fellow peers and I completed the programme successfully. These activities have not only helped me build teamwork skills, but I believe that it will be a beneficiary for my postgraduate studies, and my passion for robotics will steer me through any kind of challenge that I face in my career as a Roboticist.

After earning my postgraduate degree, I foresee myself either in Academia or working in the field of Robotics especially in the space domain. My areas of interest are autonomous space exploration and biomimicry and I believe that as a space explorer with a strong knowledge of robotics, I will be exceptionally skilled to face any challenges that come my way. Eventually, I want to pursue my PhD in Space Robotics, where I want to work on an autonomous robotic model for space. After completing my doctoral studies, I would like to work in a space agency on the development of artificial intelligence models such as autonomous exploration rovers and humanoid space explorers. I believe that the contribution of robotics in space is going to be enormous in the near future as we currently have a pressing need for competent robots to support us in space explorations and expeditions.

I am confident that a Master of Applied Science Program in Aerospace Science and Engineering from your University will help me embark on an exciting journey of Space Robotics that will lead me to new heights and help me fulfill my career objectives. After enrolling in your program, I intend to implement all the skills I have learnt and improvise my prototypes. Through your program, I will be able to enhance my capabilities such that I can contribute to further advancement in present-day artificial intelligence models. I am aware of the quality of research that is regularly published from your University and I long to be a part of your team of skilled researchers working towards bringing about innovation in current technologies. I believe that being guided by exceptionally talented faculty at your

premises will give me a better perspective for my future and help me attain a deep level of expertise in my field of interest.

Given my extensive experience in designing and developing robot prototypes and my immense passion in exploring this field further, I intend to be a well-qualified and valuable member of your student community and gain competence in my subjects in order to build a bright future for myself in this field.