# Statement of Purpose

I've been fascinated with robotics, particularly self-navigating robots since I was a child. I was obsessed with figuring out how these systems worked and recreating them. In the years afterward, I've learned how critical it is to innovate and recognize technology gaps in society to bridge them. I want to close the technological void by utilizing autonomous systems to meet human needs and improve lifestyles. With these goals in mind, my immediate objective is to obtain a Ph.D. and to do research that challenges and eventually sharpens my talents.

Since 2018, I've been studying Mechanical Engineering at Vellore Institute of Technology in India, concentrating on Robotics, Mechatronics, and Artificial Intelligence. With a desire to learn, I joined my university's Robotics Club in 2019 and competed in various competitions organized by my club. After a year, in 2020, I founded an Intelligent Vehicle and Space Exploration Team working on autonomous systems at my university, and we won more than twenty awards in competitions. My team and I began utilizing the stage we built to motivate and upskill aspiring engineers by introducing them to robots and vision. Today, the team has grown to over fifty dedicated engineers who use it as a platform for doing research and development in the sector. This team, which I built and nurtured, will always be my most cherished achievement.

After initiating the team, I felt the need to gain various experiences that could enhance my skills. In the year 2020, I started working as a researcher at Yuan-Ze University, Taiwan. My research at the university was based on semantic segmentation using conditional random fields. I have also worked with organizations such as Aero2Astro, India, and BrainMagic, India. These diverse experiences (research and industrial) that I encountered this year showed me how much research and development fascinated me, and the desire to create new systems in robotics and autonomy was only growing over time. I've always worked honestly toward the wonderful objective of research and development, and my entire path has been built around it.

In subsequent years, I began working as a researcher for reputable universities such as McMaster University in Canada and Arizona State University in the United States, concentrating on soft robotic arm control and 3D image reconstruction of building sites. I am now working on autonomous monocular obstacle avoidance at the Indian Institute of Science in India.

I've also worked with many non-profit organizations to assist the poor and disadvantaged through different welfare programs. The National Service Scheme (an Indian government-sponsored flagship public service program administered by the Ministry of Youth Affairs and Sports of India) with which I worked had a stellar track record of promoting various social welfare measures such as coastal clean-ups, slum clearance, and orphanage upliftment. Then I joined the Madras Scientific Research Foundation and began teaching elementary design and coding to underprivileged students. Meanwhile, I joined the Robotics and Automation Student Chapter of the Institute of Electronics and Electrical Engineers to provide technical help to the student chapter at my institution.

Writing and art have always piqued my interest since I was a youngster. I've always liked turning my fantasies and passions into probable realities. My dairy and art books from elementary school bear witness to this. I have a record of representing my district and school in painting competitions. In the year 2020, I started producing blogs to help artificial intelligence enthusiasts. In less than five months, I was able to write more than ten entries. My first research piece was published in the year 2020 and my research was named the best research paper at the international conference. I'm at present involved in two more first-authored research papers based on robotics and automation.

Problem-solving, literature reviewability, organizing results, authoring research papers in latex, planning for sub-tasks, using the Scrum process, and storing sensor data in ROS bag files are a few of the abilities I developed in my journey of research and development. I've always thought that learning is a lifetime process, and I've worked hard and honestly throughout my career to attain that aim, expanding my knowledge of autonomous systems and perception. With all of this knowledge, experience, and talents, I am now seeking to get closer to my life's crucial objective of pursuing research focusing exclusively on autonomous systems.