Statement of Purpose

My journey to become an engineer is heavily influenced by watching my favorite movie, Iron Man. The concept of a flying exoskeleton controlled by an AI was the most amazing thing I had ever seen in my life. I took electronics and computer engineering in hopes of understanding the skills and knowledge needed to understand such machinery. So I took up courses like Robotics and joined our Campus Mars rover team and worked on the electronics but after a year of working on it, I realized computer science is where my interests lie. During the same time in the 6th semester I had an amazing faculty Dr. Dhanlakshmi teaching machine learning at the time became a mentor for me guided me towards my interests and helped me learn new things in a more streamlined and cohesive manner under her guidance I continued to do various projects.

Under the guidance of Dr. Dhanlakshmi, I delved deeper into topics like Machine Learning, Deep Learning, and Data Analysis. The knowledge acquired from these courses fueled my passion for AI and its potential applications across various fields. This interest was further solidified through hands-on experience gained from two major projects – "Object Detection System with Voice Feedback for Blind People" in this project we applied the knowledge that we gathered from the previous semester and developed a model aimed to provide a user-friendly gadget for visually impaired individuals, using deep learning and voice feedback to enhance their independence. It's projects like these that drive me. We leveraged YOLOv4, DarkNet, OpenCV, and Google Text to Speech to create a user-friendly gadget that empowers visually impaired individuals. The aim was to create technology that enhances the quality of life for the visually impaired and is easily accessible and idea of using technology to create tangible, positive changes in people's lives is the essence of why I'm passionate about artificial intelligence. We were able to present this project as a research paper at an IEEE conference earlier this year.

During the final semester, we did our major project, "Multi-Pedestrian Detection using Hybrid ML Algorithms for Autonomous Vehicles" The objective was the development of an end-to-end pedestrian intention detection architecture capable of functioning seamlessly both during the day and at night. The key methodology revolves around the utilization of bounding boxes for object identification. Various deep-learning techniques, including YOLOv3, Darknet-53, and YOLOv7, are employed for effective object detection. In a country like India, where traffic can be chaotic and unpredictable, developing a system to predict pedestrian behavior is not just a theoretical exercise, it has the potential to save lives and make our roads safer.

We got the chance to learn a lot doing these projects, during the research stage of these projects we came across some very intriguing papers and that is something that added to my interest in the field. Along with these projects to gain more practical knowledge of the subject I joined our official Mozilla campus club called SRMKZILLA in my first year of college and ended up becoming the president of the club. SRMKZILLA focused on promoting open source and community building. In this role, I led a team of dedicated individuals, managing operational work, collaborative projects from various companies, and public outreach. My association with SRMKZILLA introduced me to the world of social outreach. In alignment with our mission to drive positive change in every way possible, I actively participated in and organized activities as part of our Social Outreach Program. This program involved visits to orphanages and homes for the differently-abled, where we dedicated our time to sharing happiness and love with those in need. It was immensely fulfilling to witness the joy and smiles we brought to the children at these institutions, and it reinforced my commitment to giving back to the community. During the COVID lockdown, we successfully devised a method to conduct an entire fest online during the COVID pandemic, ensuring it remained interactive. This was complemented by the MOZOHACK event that we organized simultaneously. The coordination with team members presented a significant challenge. Managing over a hundred people for event execution, providing guidance, and overseeing participant engagement proved to be both challenging and a fantastic opportunity for learning delegation and gaining insights into effective team management.

I was also a part of our campus rover team called RUDRA, where I joined as an electronics member and worked on the embedded systems presented for the rover and helped design the BMS of the rover and with my team, I helped develop a customized PCB. Later in my tenure at RUDRA, I transitioned to the corporate domain within the team where I was responsible for managing finances and coordinating with internal domains., a shift that broadened my perspective and introduced me to the intricate dynamics between technology and business. We competed in many competitions some virtual due to COVID and some that were conducted in person, and both of these experiences of IRDC and IRC gave me a chance to interact with people from all over the world and broaden our perspective. Working on such a large project with an amazing team gave me numerous opportunities to learn various things like working with people who worked on the drive system and helping out with the autonomous navigation.

Growing up in a diverse array of cultures due to my father's military career has been a cornerstone of my life, fostering adaptability and open-mindedness. Despite facing challenges like frequent school changes and limited education opportunities due to curfews in Kashmir, I cultivated resilience and a focus on my goals. These experiences, coupled with my academic journey, have shaped my character and outlook. Having completed my bachelor's, I recognize a gap in my understanding of the subject, motivating me to seek in-depth knowledge and expand my skill set for future opportunities. In the short term, I aim to secure a role at a startup, drawn to their innovative and agile environments that encourage continuous learning. This step will allow me to contribute beyond my designated role and build a solid foundation for my future goals. Looking ahead, my long-term aspiration involves establishing a startup aimed at addressing real-world challenges, leveraging the wealth of experiences and skills acquired throughout my unique journey.

My decision to pursue a Master's in Artificial Intelligence and innovation at Carnegie Mellon University is driven by my desire to delve deeper into this fascinating field. The university's culture of innovation, diversity, and academic excellence aligns perfectly with my academic goals and values. I believe the entrepreneurial spirit at CMU would help me reach my future goals. I am confident that this program will help me solidify my concepts, build a strong foundation, and provide opportunities to showcase these skills. Faculty like Nihar B. Shah's recent work addressing various biases and other challenges in human evaluations via principled and practical approaches is very intriguing and his research goals I believe align a lot with mine. Apart from academics I would like to join the activities board put my event planning experience and contribute to the best of my abilities.

In conclusion, I believe that my unique educational background, passion for AI, and leadership experiences make me an ideal candidate for the MS in Artificial Intelligence program at Carnegie Mellon University. I am excited about the opportunity to learn from renowned faculty, work alongside like-minded peers, and contribute to the university's vibrant intellectual community. I am confident that this program will equip me with the knowledge and skills necessary to make significant contributions in the field of AI and achieve my career goals.

Thank you for considering my application. I look forward to the possibility of contributing to and learning from the Carnegie Mellon community.