Being an avid gamer, I had a deep curiosity about online games and how they function from a very young age. When I was in school, I volunteered for maintaining locally hosted game servers and this served as the starting point for my interest in Computer Science. It paved the way for me to host my own servers for my friends and relatives and I soon became popular for my smart custom scripts. Handling tasks related to servers all day long led me to discover the wonders of automation, and I created a database of my scripts on my Linux system. I was quite fascinated with the way I was able to automate server management and I began searching for other projects where I could apply this concept. This was when I was in high school, and I got the opportunity to automate the scoring system for a Science Quiz using C# programming and software development. After this, there was no looking back. I gradually moved on from web development to mobile development learning several languages and development frameworks in the process. Based on my knowledge, aptitude, and initiative-taking abilities, I was offered several internships where I could use my skills in application development and machine learning for various applications. After all these enriching experiences, I now wish to take up more research-oriented projects and acquire a unique perspective to technology, and I intend to fulfill my goals through a postgraduate program in Computer Science.

As my interest in computer and technology had developed since a young age, I was interested in pursuing my interests in this domain, and so, after completing high school, I decided to pursue my undergraduate studies in Information Science and Engineering. Having had extensive experience in using the Linux system in school, I found my course on Unix and Shell Programming extremely useful and I learned several Linux tools through this course. Another course that I found extremely helpful was File Structures, where I learned several algorithms for file management and storage. Among my practical courses, the most enjoyable and useful was Database Management Systems and I have used SQL and other tools extensively in most of my projects, one of them being development of a web application for managing college festivals. My practical course on File Structures helped me learn how to manage and store data efficiently using different methods which was very useful to me when I cached user data for a mobile application.

Eager to combine my passion for gaming along with the new skills I had learned through my undergraduate coursework, I undertook the development of a mobile application known as TwitchXitch used for compiling gaming videos. I wanted to create a YouTube channel and attempted to compile gaming clips from a streaming service such as twitch.tv thus eliminating the need for creating videos every time. In order to automate the process of collecting videos, I developed an application that used web scraping and open APIs to extract the most popular video clips from twitch. Following this, the FFMPEG tool was used to combine all these videos together with the help of appropriate animations. The channel is currently live on YouTube with over 20,000 views and work is still ongoing to further customize the platform. Through this work, I have acquired in-depth knowledge of Twitch and YouTube APIs, FFMPEG, and media delivery over HTTP protocol.

One of my friends who is a security analyst indicated a requirement for a mobile application that could remotely execute BASH scripts and I was happy to take on the task. For my application, known as MonitX – Script Monitor, I used Node.js to develop a secure API gateway which considered several

arguments and options to accept requests and run scripts. Not only did this solve my friend's problem, but it has also been very useful to me for maintaining my home server. This project gave me immense knowledge about BASH scripts, Node.js, and mobile application development.

When I learned about file storage and management in my File Structures course, I was interested in applying the concepts practically, and so I developed a graphical C application for storage and retrieval of files from FileSystem. I gave instructions to the application to use various parameters such as length and size to store the files sequentially. This project helped me understand and execute the organization and management of files based on a given system.

During the course of my undergraduate studies, I have realized that several universities, including my own, tend to give lower scores to papers with bad handwriting as compared to papers with mediocre or good handwriting. Hence, in order to give a fair chance to students with bad handwriting, I decided to digitize examinations focusing on the data transfer between the student and the examiner. As I started working on this, I realized that this paved the way for data analytics and adaptive testing that would provide a unique experience to students taking the examination. The tests could be customized based on a student's skill set and comprehension of the subject, and the scores would truly reflect the level of knowledge and understanding the student has of the subject matter. Currently, I am using principles of machine learning to develop a real-time grading system which evaluates answers against specific keywords and gives a grade, and this system can be altered based on the difficulty level of the test. So far, working on this project has given me a strong overview of areas such as natural language processing, multiple class classification, item response theory, and secure data transfer.

Based on my knowledge of application development, I was elected to be a part of the development team for my college fest, where I developed an iOS application known as Habba 2018 with a user interface package that was later published on NPM package manager. Working in a team of web developers, graphic designers, and audio effects experts was an exhilarating experience and I developed in-depth knowledge of animation of components using React Native and use of JavaScript for making exportable packages. Apart from gaining technical expertise, I learned how to work well in a team, divide tasks appropriately, and communicate effectively with team members. This experience served to make me an expert programmer and I also learned how to implement SDLC components. Due to my performance and the critical acclaim that my applications had received, I was asked to join the team a second time the subsequent year, where I used SCRUM and AGILE to develop a mobile application for ERP. Working in this team gave me the experience of working in a fast-paced corporate environment with strict deadlines and collaborations with several team members to meet requirements.

Given my experience in application development and my knowledge of Flutter and Node.js, I was asked by Skillray.com to produce several video lectures explaining Flutter to viewers. I accepted their offer and produced over 10 hours of video content where I mostly taught the basics of Flutter along with a few advanced concepts. Through this experience, I was able to bring together and structure my knowledge of Flutter, and present my knowledge to viewers in a systematic manner.

Having received considerable exposure to the domain of application development, I was interested in working on a research project, and so, I undertook an internship at the Old Dominion University. Here, I learned how to conceptualize research projects by considering the applications of existing technologies for patients suffering from terminal illnesses. I specifically worked on the detection of aggression in Alzheimers' patients and notifying the caregiver so that corrective measures are immediately enforced. During my internship here, I had the chance to work with a lot of distinguished researchers who introduced me to the ongoing research projects in different parts of the world, and I also learned about the latest advancements in the fields of machine learning and IoT, and their applications in the healthcare industry.

Apart from my undergraduate coursework, I have taken the initiative to participate in various events and activities that helped me improve my knowledge and build a strong professional network. I presented a paper on using sensors in smart devices to detect aggression in patients at a paper presentation event conducted by AICTE, and won the first place for my innovative and useful proposal. My expertise in Node.js led me to conduct a workshop on this technology for my juniors where I taught them the basics of its usage and applications. Both these experiences have helped me think creatively and develop strong written and verbal communication skills for presenting ideas and thoughts to an audience.

Given my extensive experience in application development and its technologies, I have gradually realized the potential uses of my skills in real world scenarios. However, I feel that my exposure has been limited and I seek to acquire a more comprehensive view of the field in terms of technologies and types of projects in different industries. Hence, in order to develop advanced knowledge of computer technologies, I wish to pursue a postgraduate program in Computer Science. After completing my higher studies, I wish to work on research projects in the medical field where I can develop solutions for existing problems in patient care. Specifically, I want to make use of information technology and embedded systems in the fields of healthcare and education so that I can contribute to the realization of two of the 17 sustainable development goals laid out by the United Nations.

In order to fulfill my goal of using advanced technologies for addressing real world problems, I wish to take up a postgraduate program in Computer Science at _____ University. The numerous research projects that I have worked on and the internships I have attended during my undergraduate period have given me a strong command over the concepts. I now wish to deepen my understanding of the field and become up-to-date with the most recent trends in the field of computer science. I intend to acquire a strong technical skill set by pursuing several exciting and challenging projects at your state-of-the-art research facilities. Being guided by accomplished faculty such as _____ and _____ at your premises will help me take my projects to the next level and acquire a more comprehensive understanding of the field.

My experiences in using my knowledge and skills for research projects in my field of interest have given me a strong knowledge of my subjects, and I am confident that my aptitude and passion for the field will help me stand out at your campus.