STATEMENT OF PURPOSE

I am applying to Arizona State University for admission to the M.S. program in Computer Science. My interests lie in the areas of Operating Systems, Distributed Systems, Computer and Network Security. The varied academic and industrial experience I have had, has motivated me to pursue a research oriented study in these fields at your acclaimed university.

My fascination for computers began during my school days and has only multiplied over the years. Watching my interest grow, my uncle who was a freelance programmer involved me in some of his projects during my high school. He taught me the basics of Visual Basic and let me create simple user interfaces for his projects which involved drag and drop of objects. Witnessing my small contribution being used to build something big, which I couldn't comprehend back then, sparked a desire in me to dig deeper. Motivated to pursue in the field of computers, I secured a rank of 1456 out of 200,000 odd aspirants in the Karnataka state engineering entrance examination. With this ranking, I bagged an opportunity to study computer science at Sri Jayachamarajendra College of Engineering, one of the finest colleges in the state of Karnataka, India.

To put my theoretical knowledge to practice, I worked on various projects, presented seminars and participated in workshops throughout my undergraduate studies. During my junior year, one of the courses that interested me was "System Software". My interest for the subject motivated me to implement a macro processor, which replaced each macro instruction with the corresponding group of source language statements. Implementation of this project not only helped me to improve my programming skills, but also to appreciate the hard work that goes in developing complex system software.

I also worked on a project, "Scalar Quantization of Audio and Speech Signals" using MatLab. The project performed a lossy compression of audio and speech signals, by dividing the input data values into intervals of appropriate size and assigning a binary code word to represent each interval. A good understanding of various strategies used for data compression helped me identify a room for enhancement. I employed Huffman Encoding to generate the code words which reduced the number of bits required to represent them and thereby further reduced the number of bits transmitted. This helped me see how a firm hold on theoretical concepts can motivate one to analyze and experiment.

My final year project, "An Empirical Approach to Classify English Web Pages", which classified a web page as written in American or British English, exposed me to another discipline in Computer Science, Natural Language Processing (NLP). The system performed the classification in several stages. The initial stages involved processing of URL and HTML tags. The later analysis involved processing of the actual text in the web page to identify the grammatical differences. This required execution of various NLP tasks like parsing, tokenization, text segmentation and part-of-speech tagging. Working on this project enhanced my interests in Java and also illustrated the vastness and significance of various NLP tasks.

During my 8th semester, I got an opportunity to work as an intern for Schneider Electric India Private Limited. My project was titled, “Implementation of Android Application to Read Data from SFT SAV Sepam Devices”. SFT SAV Sepam devices are used to detect voltage fluctuations that can cause damage to electronic equipments. The application communicated with the device using Modbus protocol, an application-layer serial communication protocol based on master/slave architecture. This project introduced me to programming for Android Operating System and to a new protocol altogether.

After my undergraduate studies, I have been working for Oracle India Private Limited for around 2 years and my experience has been a rewarding one. My team is primarily engaged in performance engineering of applications on Solaris Operating System and Oracle Hardware, which includes optimization of hardware resources and tuning of various operating system and network parameters. I was involved in the development of tools that aid this process. One was the “Oracle Preflight Application checker”, which helps in the migration of applications from Solaris 10 to Solaris 11. The other was the “Oracle Performance Advisor”, which suggests performance related changes that can be done to the application. I have also gained exposure to several virtualization technologies like Logical Domains, Zones and Kernel Zones and the suitability of these technologies in different situations.

I believe that a right balance of academics and extra-curricular activities helps one develop a well-rounded personality. I have been learning Carnatic classical music and “Bharatanatya”, an Indian classical dance form from a very young age. Practicing these art forms for years has helped me grow as an individual in many ways. I have been volunteering for a non-profitable organization “DivyaDeepa”, which provides education for under-privileged children. As a volunteer, I have taught basic concepts of Science and Mathematics to school children and involved in various fund raising activities for the organization. I also held the post of a Secretary of Career Services, a coveted position in my institution to assist my batch mates in the placement process.

Being one of the prestigious universities in the United States, with a great amount of research being carried out in the systems field, Arizona State University has been my choice to pursue graduate studies. I am inspired by the work of Dr. Partha Dasgupta in the field of operating systems for multi core architectures. The research undertaken in his publication, “Protecting cryptographic keys on client platforms using virtualization and raw disk image access” closely aligns with my interests. It would be a privilege to work on such projects where virtualization is at the core of achieving security in a distributed environment. Given an opportunity to be a part of the diverse ASU student community, I would concentrate my efforts to sharpen my skills in the systems discipline and contribute to the research at your university.