

## Statement of Purpose

My decision to apply for a **Ph.D.** program at **University of Utah** is driven by my aspirations to pursue a research career in the field of Computer Science. This field interests me because of its formal and rigorous mathematical nature and its wide-ranging applications. I believe that a strong and thorough background as well as complete awareness of recent developments are essential for an intellectually stimulating and satisfying research career. Towards realizing this objective at an esteemed department such as yours, I am applying to your university. An objective analysis of my background, interests, strengths and weaknesses leads me to believe that I will be successful both as a Ph.D. candidate and later as a researcher in an academic milieu.

Academics has always been my strong-hold. My inquisitive nature and a strong desire to ingrain the fundamental principles as well as techniques of any subject of study has enabled me to achieve an excellent academic record. More importantly, it has inculcated in me the methodology of scientific inquiry as reflected in my rigorous and analytic approach to problem solving. This is further evident from my performance at higher-secondary school level and at IIT Bombay. The excellent course structure at IIT has given me a sound and broad conceptual basis, which, I believe, is essential for a research career. Through many projects I have undertaken in a stimulating academic environment at IIT where learning and research go hand-in-hand, I have found that I have a deep interest in research work, a strong motivation and an aptitude for the type of problem solving it involves.

Over the past two years at IIT, I have cultivated a keen interest in the field of **Asynchronous Circuits, Formal Design Methods in VLSI**. I have furthered my knowledge in this field by reading various related articles and am actively involved in research in this area. I have also opted for a graduate level course **IC Design Technology** in Spring 96. I am currently working on **Asynchronous Communication between Synchronous Finite State Machines** for my B.Tech. thesis under the guidance of **Prof. S. Ramesh**. I am working towards implementing communication primitives such as **rendezvous, probe** etc. at gate level in VLSI circuits. I am investigating different interconnect design methodologies which can be implemented as **delay-insensitive asynchronous circuits**. In the first stage of this work, we have proposed a **new protocol** to implement **asynchronous rendezvous communication** and a method to implement this protocol using asynchronous circuits. I firmly believe that this project is a sufficient demonstration of my ability to conduct original and independent research.

I have strong reasons to believe that I possess the temperament for teaching, a good power of speech and a thorough and extensive knowledge of my field : traits required for a successful teaching career. I have worked as a teaching assistant in a nation-wide teaching program for two years. I have also been lecturer

and tutor for three **UNIX workshops** conducted by **CSEA, IIT Bombay** which were attended by more than 250 people every time. This experience developed and honed my skills of organizing and communicating my thoughts in front of a responsive and critical audience.

I have always attempted to gain insight into the problem at hand and tackle it from different angles. I am well aware that a career in research calls for personal commitment and personal sacrifice of time, leisure and immediate reward. However, my desire to realize my full potential and to make an original contribution to the field of Computer Science drive me to pursue a research career, which, I believe, will give me intellectual satisfaction, gratification of becoming a contributor to knowledge and personal rewards of learning and discovery. I not only possess the intellectual ability, sound preparation and the strong motivation for research but also consider myself mature, friendly to work with and open to criticism : qualities essential for group research.

I believe that a symbiotic relationship between the student and his department is of utmost importance for a successful graduate program. Considering the pioneering work going on at your department in the field of my interest, your department is an ideal choice for an exciting research career. At the same time, I am confident of contributing originally to the ongoing work at your department. By working under the guidance of distinguished faculty at your department, I am sure, I will be able to exploit my potential to the fullest.

Keeping this in mind, I look forward to joining **University of Utah**.

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