

## STATEMENT OF PURPOSE

There is a very famous adage, “ If you think education is expensive, then try ignorance”. I could not agree more. I believe research is necessary to acquire data and formulate theories, but it is just as important to know how to apply those theories and use that data in the real world. To be competent and competitive I will require a master’s degree. A master’s degree will give me the up-to-date tools and knowledge that are the need of the hour.

While in my third year of undergraduate study, I learnt the concepts of signal processing and microprocessors. These topics have fascinated me ever since. When I studied the fundamentals of analog and digital signals, I almost decided that Digital Signal Processing was the career for me. What got me more enthused in this area was when I learnt about microprocessors. I had the opportunity to study some of the processors during my third and fourth (final) year. That’s when I realized how the two fields could be merged together by having dedicated processors. I am certain that my interest in this will increase by taking Digital Signal Processing and Microcomputer System Design as electives in my final semester of undergraduate study.

In DSP we shall learn in depth about FIR, IIR and Quantization errors. Here we shall also cover Z-transform analysis, filter design (IIR filter design and FIR filter design), DTF, FFT and its applications. As an introduction we shall learn Texas Instruments and Analog Devices special DSP Processors. In Microcomputer System Design, the Pentium Processor and PCI bus will be covered. Conceptual view of Microsoft Windows NT, Windows NT models- client server is also a part of the curriculum.

Digital signal processing is one of the brightest spots in the semiconductor business today, and one of the few deserving the title “breakthrough”. Like earlier advances in microprocessors and computer memories, digital signal processing is a foundation technology with the power to transform broad areas of the electronics industry. Its impact is being felt in applications as diverse as stereo systems, cars, personal computers and cellular phones. In the next few years, digital signal processing should give rise to hundreds of new products and change what people expect from technology.

The fact that the world market in programmable Digital Signal Processor chips hit more than \$3 million in 1997, having tripled in just three years shows that Digital Signal Processor have come a long way and are here to stay. It is projected to increase to around \$14 million by the end of 2002. The future in this field is ever increasing and provides opportunity for the to-be engineers in this field.

Also being a member of the internationally acclaimed Institute Of Electrical and Electronic Engineers (IEEE - currently Communication Society, next year I will be enrolled for Signal Processing Society) has given me the opportunity to keep abreast with the latest in today’s advancing technology. This has also increased my interest in the field of Communication. Hardly surprising, much of the growth of DSP is being driven by communication. Thus this gives DSPs a wide area to exploit.

In my final year, I joined hands with three other students to undertake a project. Our project consisted of designing an Automated Teller Machine (ATM). The heart of our system consisted of the 8086 microprocessor. We shall use assembly language for programming the microprocessor. This is one of the most interesting large projects that I had a chance to be a part of. It is an extremely practical experience, which I really enjoy.

During my undergraduate course in the Department of Electronics I have consistently scored above 65 %, which is a matter of great pride for me, as very few student have achieved this feat. This makes me several cuts above the commonplace. Our courses were purely theoretical in nature. I would like to change that. As I have mentioned below, I am a practical person and like to see things work.

I enjoy teaching and although I have no formal experience, my naturally strong communication skills will help me considerably. I envisage myself as a teacher and researcher – either in industry or in the university. I definitely see myself in the role of a teacher to undergraduates. In fact, that’s something I would enjoy immensely.

I am a very practical person and my understanding is prodded by actually seeing things work. I am a quick thinker and learner. Your university could be the nucleus to accomplish my goals, as ample opportunities exist for students like me to initiate independent study and to become involved in active research programs, both experimental and theoretical. I would be more than happy to be given the opportunity to pursue my graduate study in your university. I am confident that in return for this I can make a perennial contribution to your institution.