**STATEMENT OF PURPOSE**

Electrical and Computer Engineering is the heart of the most current technological breakthroughs. Any device with an energy or IT component in it derived from ECE knowledge. Right from providing accurate medical diagnoses to exploring distant planets, ECE plays a crucial role. This dependency on ECE motivated me to pick this department. Since childhood, I always had the urge to know what the science was behind the robotic toys and gadgets and how they worked. The mysteries amazed me and my romance with technology grew stronger day by day. My strong inclination towards Mathematics and Science made me choose engineering, but later I realized that what I have learnt is just a few drops in an enormous ocean of knowledge. My decision to pursue Master’s is a natural consequence of my desire to gain as much knowledge as possible in my field of interest and help myself to be able to achieve and put my wildest dream to life.

I pursued Bachelor of Engineering with a specialization in Electronics and Communication Engineering from Government Sri Krishnarajendra Silver Jubilee Technological Institute (GSKSJTI), Bangalore(07/2013 to 06/2017), and studied subjects such as Analog Electronics, Microprocessors, Digital Systems Design, Digital Signal Processing, VLSI, Analog and Digital Communication and Antenna which gave me a good theoretical knowledge. The corresponding practical classes have equipped me with abundant practical experience. I consistently maintained a First Class with Distinction in almost all the semesters and wanting to have a in depth knowledge of my subjects kept in touch with all the new discoveries and researches by reading various magazines such as Electrical India, Data Quest, Electronics For You. I have also attended various seminars, trainings and workshops such as Sixth Sense, Open day at IISc(Bangalore), and IOT workshop conducted in my college by BITES.

The seminar I attended on 5G conducted by Nokia and the training I attended of the Sixth Sense technology (the wearable gestural interface that augments the physical world) conducted by Technophilia Systems (2015) and the Cadence workshop conducted by cadence at GSKSJTI (2016) have made me realise the beauty of the ECE domain.

These motivated me to present many papers such as ‘Channel Modelling of Underwater Acoustic Communication’ in 08/2016, ‘Vehicle Detection using Simplified Fast R-CNN’ in 11/2017, ‘Audio Spotlight’ in 03/2017’, ‘Image Fast Template Matching Algorithm Based on Projection’ and ‘On the performance of AOA Estimation Algorithms in Cognitive Radio Networks’ in 09/2018. And I participated in training on Computer Vision, Deep learning, AWS cloud, Big Data and full stack development. The seminars and trainings I attended have encouraged me to take courses on IoT, Java, MATLAB, Cadence and Python programming.

Likewise, I have worked on a number of projects such as ‘Intelligent Driver Assistance’, ‘Gear Display System in Bikes’, ‘Conversion of the Non-touch screen to touch screen using Wearable Gestural Interface’ , ‘Image Detection and Alerting’ and ‘Geo-fence Creation for Child Monitoring’. For each and every project, I chose a new technology and garnered a wide range of knowledge about real-time problems.One of these was the project on ‘Image Detection and Alerting’ which I worked upon in October 2017. Having taken the picture of a moulding machine, we had to enhance the images. Later had to remove the unnecessary noise in the image and then extracting the features to check if any material was stuck. Thereby having identified the problem, it was easier to detect and communicate the actual issue to the management and thereby, arranging a fix. All these were done in the real time using video streaming protocols.

My final year project titled ‘Intelligent Driver Assistance’ was to ensure assistance to the vehicle drivers. It addressed three cases of real time traffic scenario. The focus of the project was to help the drivers to know the traffic sign in a particular zone through voice and image assistance. And to have automatic speed control/limiting mechanism based on the speed limit in a zone. And the last issue addressed was the overtaking assistance to the driver based on real time inter vehicle distance, speed and on road situation.

In order to garner real life experience, I joined Adisys(R&D)Private Limited and worked on Real-Time Object Detection using Deep Learning from October 2017 to March 2018. As a part of a 8-membered team, we had to train our own model of faster RCNN for detecting the vehicles and calculating the density on the road, and adjust the timer to change the traffic signal accordingly, thereby mitigating the traffic woes. It was through this project that I learned how deep-learning works from end-to-end. I also wrote algorithms to help the system detect the objects in the ROI. This project was one of the key elements of the Karnataka Governments Pilot project. The release of the project is currently under consideration. Having worked on this, I presented a paper on ‘Vehicle Detection using Simplified Fast R-CNN’ and elucidated about the training and testing of the given model, thereby reducing the time taken by the system.

Moving forward, I joined SASKEN Technologies Private Limited in 07/2018, which provides Product Engineering and Digital Transformation Services. As the Full Stack Developer I am currently working on a video conferencing app using Vidyo API where more than 16 people will be conversing using a Skype-like platform and also making sure that video quality is not deprived. While working on these, I was motivated to learn more technologies and work on similar such innovative digital products. Having always cherished a dream to complete my graduate program, I feel that this is the right time for my higher studies. Hence, I am applying for the MS course at your esteemed university.

The University at Buffalo is ranked one of the best in terms of research and the courses it offers. The research work that is happening at the university and the highly trained and research-oriented faculty would enable me to quench the thirst for knowledge in a more easy way. The Department offers an extensive research in Masters in [Signals, Communications and Networking](http://engineering.buffalo.edu/ee/research/areas/signals.html) specialization which includes researches such as underwater acoustic communications, Algorithmic and combinatorial aspects of information in communication, management, and storage and Magnetic induction-based wireless communication and networking in RF-challenged environments. Having studied Prof. Konstantinos Slavakis’s project ‘Feasible Point Pursuit for non-convex QCQPs: Algorithms and Signal Processing Applications’, I look forward to studying under his mentorship. I am also looking forward to studying under Prof Michael Langbergas because his publication ‘Generalized Gray Codes for Local Rank Modulation’ is intriguing. I am also intrigued to find out other facilities like research laboratory and teaching labs and lecture halls would be helpful in achieving my dreams. If given a chance, I would like to play football for UB Bulls.

My immediate goals happen to persue research in the communication domain .This will not only help me apply the knowledge I have accrued but also help me get a much more globalised perspective. In the long term, I want to become an entrepreneur and leave a legacy that will live on after me. It is not how many years one has lived but how one has lived them has always been the guiding philosophy of my life. Life for me does not merely exist for the pursuit of one’s own happiness, but a never ending mission to make a difference to the lives of multitudes.

Hence, I aver that my talent will be utilized to its optimal best if I have an opportunity to be a part of the intellectually stimulating environment of your university. I shall persistently strive to make your institution proud.

//extracurricular activities and community service.