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**STATEMENT OF PURPOSE**

With an aim to be an instrumental part of the Electronics industry, it was indeed, deep interest in Electronic and Communication technologies that led me to choose the branch and every core subject served to enhance my knowledge base, bringing nuanced and insightful understanding of topics. I realize now that the framework of deliberate practice with concepts, principles and theories were carefully designed to equip me with competencies and confidence. I can, certainly pick my favorite subjects and state firmly that Embedded System Design were high impact subjects that inspired and motivated me endlessly. I seek to do an engaging master’s program that gives a varied exposure which aligns with my goal of gaining an all-round experience in the extensive field of Embedded Systems. The master course at (Hochschule Darmstadt University of Applied Sciences) will help me achieve this motive.

What started as a childhood hobby; later turned into my career aspiration through consistent exploration. My interest to finding out how autonomous systems were designed only increased over time. This unswerving interest was the reason behind making an undoubted decision to choose Electronic and Communication as major in engineering. The curriculum at Srinivas institute of Technology, not only did provide a great foundation to engineering, but also an exposure to varied disciplines including concepts from Communication Systems, Embedded Systems, Computer Networks and other programming languages such as Python, C and C++. I then figured out that Embedded Systems were of key importance, for design of autonomous systems.

Engineering coursework’s in hardware and software, gave an overview on how to prototype ideas and solutions, which were not only application specific but also generic. In the semesters that followed, I have always reaped an interest to develop projects, which brings about a positive impact on the society. As a part of team, in my third year of engineering, I have developed and prototyped an IOT based project named *“Multi Clap Switch Glowing 220V Bulb*”, which can switch on/off any electrical circuit by the sound of a clap. The aim of the project will serve well in different phono-controlled applications, providing inexpensive key and at the same time flee from false triggering. This involves the design of various stages consisting of the pickup transducer, low audio frequency, low power and low noise amplifier, timer, bi-stable and switches. A decade counter IC serves the bi-stable function instead of flip-flop; special transistor and edge triggering network for low audio frequency. Through this project I have learnt, how to select electronic components for a given application and integrate them for fast prototyping; how to apply an engineering concept to design application specific system. Adding to future scope of project, we have developed an idea to help the handicapped and the paralyzed. We also concluded by proposing a business model to install such systems in hospitals where monitoring of patients is of utmost importance.

Later as an advancement, we worked and developed on final year project named *“A Friend from ACCMICONRFRE for Handicap*”. In this project, I have incorporated necessary hardware and software additions such as to include a gesture recognition sensor and feather touch sensor to aid the usability for the handicapped. The heart of the system was the controller, which communicated to sensors in real time and took decisions based on the selection. This decision was transmitted wirelessly over a range of 1km, effectively communicating to a receiver. Thus, bringing into notice of the care taker, of any such requirements by the patient. Our written code proved robustness with the integrated hardware platform. Through the advancement, I have learnt how to interface different sensors to controller and effectively use its resource for specific application. I also understood to tackle major challenges such as controller calibration, RF tuning, decode and decision of received RF signal. During this stage I have learnt how the actual program will undergo in to series of protocols before the machine understands the requirement.

There were many highlights that elevated the journey and brought assurance that I was not merely tedious along meeting the demands of examinations and assessments. The fourth-year seminar project named, *“Design a Low Power High Speed Full Adder Using AVL Technique*” was appreciated by university professors for its innovation; in reducing the overall power consumption of the system, which constitutes transistor based high speed full adder circuits. As a part of team, I have also received the best final year project award for its unique application in benefiting the society. All these moral boosts have triggered in me an eagerness to know more and to contribute to the technical field.

I was motivated to understand the industrial process involved in deploying telecommunication systems in field trials. After persistent job applications, *Bharath Electronics Ltd, Government of India, Ministry of Defense and India’s leading R&D industry,* appointed me as Graduate Apprentice Trainee for its Telecommunication and Broadcasting systems department from Feb 6 2017 till Feb 5 2018. During my initial part of training period, I have worked on configuration, trouble shooting and installation of various network devices and have monitored system performance to ensure effective utilization of network capacity over LLTR, MCT, SCT, TROPO and NTRO projects. The communication link involved end to end IP Phone connections and Data Terminals, which were linked through routers, modems, up-converters, Power Amplifiers and Auto Controlled Antennas. My task was to setup the communication links for LOS, VSAT, OFC layer and test end to end IP Phone(VOIP) connections over these layers. Here, I have learnt the significance of protocol and industrial test procedures for voice over IP. I have understood the process involved in controlling antennas in 3 dimensions. The work involved to, track a satellite from a given latitude and longitude using azimuth, elevation and polarization parameters. As these projects were used for defense purpose, the network had to be made, secured by incorporating link, IP, SIM and E1 level encryptions. Here my work focused on validation of IP and E1 level encryptions over different communication processes. For testing different communication link, I have used Spectrum Analyzer, Network Analyzer, Digital Transmission Analyzer, Counter and Power Meter. The yearlong exposure to industrial process has fine-tuned my Bachelor concepts and has imbibed confidence to handle complex task in upcoming venture.

I have created a *Chabot* in python and integrated to Facebook messenger. As the extension, I am trying to integrate the same to my college IOT project, *“Multi Clap Switch Glowing 220V Bulb.*

With all my endeavors, achievements and industrial exposure, I believe, I have prepared collaboratively for an advanced study and research in the area of Embedded Systems at your esteemed university. I aspire greatly to be able to witness an inter-cultural learning environment, with world-class facilities and exposure to the frontiers of science and technology. One such example is; the research work carried by professor XYZ in the field of ABC, which has caught my interest. I would readily embrace an opportunity to study at (Hochschule Darmstadt University of Applied Sciences) and strive hard toward betterment of the institution.