

I have always believed that if you know how to make a computer do things, you can make it do anything for you. The whole concept of Machine Learning is built on the ability of the human mind to program machines to perform unimaginably tedious and time consuming tasks in a comparatively lesser time. As we move into a very unique kind of industrial revolution where the volume of data generated is massive, it seems like a waste of human time and effort to manually sort this data and carry out further processing steps to make it available to the right people. Even if this task is done by humans, the time taken will negate any positive consequences the data may have on the company's growth. Hence, the demand for skilled professionals in this field is very high and I feel I am capable and competent enough to make valuable contributions in this domain. A postgraduate specialization in Machine Learning will further help me gain advanced knowledge and expertise in the subject matter using which I will be able to fulfill my future objectives successfully.

Having grown up with complete access to a desktop, I have been quite fascinated and intrigued with this machine and the wide range of tasks that it could perform. I learnt programming at a young age to satiate my curiosity about how a single command can make the computer perform complex functions. The combination of my inclination and aptitude towards computers gave me a clear direction for my future, and so I pursued my undergraduate studies in Computer Science and Engineering. During this period, I particularly enjoyed learning about Operating Systems, Compiler Design, Finite Automata, Neural Networks, Microprocessors, and C++ Programming. These skills helped me in my subsequent undergraduate projects as well as my professional tasks. I was particularly interested in Robotics and I participated in various Robotics competitions to experience designing a complete robot. Initially, I developed the design for a mechanical robot followed by a line follower, and later obstacle detecting robots using image processing techniques with the help of sensors and camera. This experience motivated me to find out more about Artificial Intelligence and this field has always been a matter of passion and interest for me.

Immediately after my undergraduate studies, I wanted to gain in-depth industry experience and so, I started working as a Software Engineer in Hewlett Packard. Here, I worked on the partitioning subsystem of Mission Critical Servers built with Itanium and x86 processors, where I completed a performance analysis of the partition resource allocation and deallocation operations, and fixed various bugs and solved customer issues in the subsystem. This system was developed using the language C, and was based on a finite state machine. This work experience helped me gain basic knowledge of C, partitioning subsystems, and microprocessors. More importantly, it helped me learn how to work as part of a team, complete assigned work on time, and interact with my colleagues to broaden my perspective of the industry.

After this, I moved on to work as a Senior Software Engineer in the Multimedia team in Samsung R&D Institute, Bengaluru. Here, I worked on the video chat capability of the Samsung browser where I introduced the webRTC feature on the browser which had real time communication abilities. I developed a producer-consumer model where video frames produced by the camera were encoded and decoded with the help of various strategies. This was achieved through heavy use of parallelization in C++. This project taught me how to design and build a project from scratch and how the smallest of inefficiencies in a code cannot be ignored as it can lead to major issues in the functioning of the system.

Following this experience, I started working at my current organization, Microsoft IDC, as a Software Engineer 2. Initially, I worked on the Microsoft Dynamics CRM as the Module Lead and handled projects on App Module and Process Designer. I saw these projects from fulfillment of requirements and implementation to successful completion and I was promoted after this work for my perseverance and ability to handle tasks efficiently. Next, I worked on a project called MARS where I handled the UX for a CRM Runtime Help system. In this project, I led a team of five members where we redesigned the UX code based on the UX Designer requirements. I also collaborated with Program Managers in Copenhagen for a project on Customer Lifecycle Management and Lead Management, where I gained experience in marketing concepts and understood how to interact influentially with the customer.

After this, I was transferred to the research and development department of the Windows Universal Store Ads, where I have worked since the past two years. I have implemented a Cost Per Click campaign model for D3A, which is our user acquisition platform, and ensured that the campaign spends is under control for each ad campaign. I led a team of two members and through this project I was able to control the cost per acquisition so that the advertisers did not have to pay a premium for acquiring users. I gained experience in code changes, database changes, analytics changes, and creation of new analytics pipeline. I have been appreciated for the success and robustness of this project and my system hasn't seen any failures since the time it was implemented.

I also developed a system for community ads where developers could show ads from other developers and receive credits. The developers could use these credits to create their own ad campaigns which would be shared with the community. I worked on the analytics part of this project where I calculated the credits received and spent, and generated a daily stream of credits. I worked on an Ad Click Prediction model to understand the probability of clicks by third parties so that we can generate the maximum ROI for an ad. I worked towards improving advertiser ROI by campaign experimentation where I was responsible for tracking and modifying campaigns for premium customers, helping them with custom changes, and developing quick scripts and applications for our customers. I single-handedly worked on a fraud detection project for three months where I analyzed top revenue generating applications with suspicious activity and lined them up for manual scrutiny.

My varied professional experiences have taught me many things, most importantly the importance of data for a large corporate. I have used data directly for user acquisition and I have also gained insights into how to use data to benefit users. Some of the most important applications in the field of Data Science according to me are personalization of procedures, prediction of diseases, prevention of suicides, and implementation of personalized learning strategies. However, I still feel that the scope of my imagination is limited and there is yet a lot more to explore in the applications of Computer Science in various aspects of our life. As a full-time demanding job does not really leave me with much time for extra study, I believe that pursuing higher studies will help me live my passion, which is to develop myself in the field of Machine Learning so that I can effectively use data to fulfill my project objectives.

I want to make myself competent enough to formulate machine learning-related problems to provide useful real world solutions by first closely studying the nature of problems, understanding the underlying patterns, and extrapolating these problems to generate relevant solutions. I also want to work in the field of healthcare where I can improve the efficiency of people with mental challenges such as anxiety, depression, and autism, by understanding what

calms them down and helping them set reasonable goals for themselves. Eventually, I see myself establishing my own company where my main focus will be addressing problems associated with mental illnesses so that people diagnosed with these conditions can have a better prognosis.

I strongly believe that a postgraduate degree in Machine Learning from your University will help me acquire advanced knowledge and expertise in this area using which I will be able to give successful directions to my future ambitions. The scope of Machine Learning is unimaginable and I am deeply interested in experimenting with different tools and techniques at your advanced research facilities. I will greatly benefit by interacting with my peers and professors from different backgrounds and learning from the best in the field to be able to understand the current industry trends and market needs. I intend to take full advantage of my time at your University by conceptualizing ideas and carrying out experiments to help me understand my own limitations and to broaden my perspective of the industry.

Given my extensive work experience in big corporates and having successfully completed several projects, I feel I am quite prepared to explore the field of Machine Learning through your postgraduate program.