

STATEMENT OF PURPOSE

Technology is the use of scientific knowledge for the welfare of all. The potential of technology is beyond imagination. I had a computer subject in my 10th standard, and in that class, our computer subject teachers used to teach the real-world applications of computer technology. They taught us why it is important to learn this subject and it was the experience that sparked a deep interest in me to learn more about the working of the computer system. Then, in the 12th standard, I built one small application with drag and drop software. Although it didn't do much, I was fascinated by this and it was the time when I realized that so many problems can be solved with the help of computers. Also, I had a keen interest in the field of linear algebra, calculus, and trigonometry. These interests motivated me to pursue an undergraduate degree in Computer Engineering.

I firmly believe that Computer Engineering is a very creative field: we can construct the solution to so many common life problems in many different ways with computers. I am extremely passionate about the ability of a computer to think like humans, it has made a great impact on me. I always wanted to know how machines can mimic the human brain and how this can revolutionize human existence. These were the questions and ideas in my head, as I began my academic journey in the field. I was quickly drawn to the subjects like Data Structures, Analysis and Design of Algorithms, and Software Engineering. My college provided a rigorous curriculum that contained both project-based and theoretical learning. Besides equipping me with the latest research and innovations in the field, my program also gave me knowledge about different programming languages. I am proficient in python and I am familiar with JAVA, C, C++, PHP, and R programming languages. In the field of Data Science, Machine Learning, Deep Learning and Artificial Intelligence; I am competent with TensorFlow, Keras, and PyTorch framework. Moreover, in python programming, I am adept at using libraries like NLTK, PySpark, Scikit-Learn, Pandas, NumPy, Seaborn, and Matplotlib, etc. These skills have helped me round off my knowledge of the field, and I have also applied the same to different real-world problem scenarios.

Applying theoretical knowledge to real-world problems has been a major part of my learning process. In the 5th semester, I worked on a "Sentiment Analysis using ML/DL techniques ". Herein, I used a pre-trained model called BERT and compared its performance with the XGBoost algorithm which achieved a promising validation accuracy of 84.22% on Amazon reviews dataset. I further worked on a project "Text Generation using RNNs (Recurrent Neural Networks)" where I developed a python script to scrape the Wikipedia website and used this textual data to build a custom model architecture of LSTM layers in the TensorFlow framework. I have also worked on "Forecasting Electricity Consumption using Deep Learning" and "Crop Yield Estimation using Machine Learning"



where I got exposed to the whole machine learning project life-cycle including data cleaning, feature engineering, and model deployment. My faculties have been extremely supportive during this learning process and their constructive feedbacks have always pushed me out of my comfort zone. These projects also helped me learn how to use the open-source community for getting the head start in developing a project and contributing to it as well. I was awarded the “Learning Assistant” badge for my contribution to the Dataquest community where I answer fellow learner’s theoretical questions and help with coding errors as well. I also gained skills such as good teamwork, communication, mental discipline, and fortitude.

My forays into the field thus far also include the experience of working in the corporate, as an intern, to practically implement the knowledge in order to meet the client demands. I worked at A.I.M. technologies where I was highly involved in AI (Artificial Intelligence) based projects especially in the development of a Chatbot for online grocery ordering using Google Cloud Dialog flow. Aside from this, I participated in Smart Gujarat Hackathon where my project title was “Form Filling through Voice Communication” in which I developed an android application. In this project, I extensively used the JAVA programming language and Android Studio. As per the company’s requirements, the Firebase database was used to provide a real-time experience. These experiences have opened up my horizons to the corporate world and given me a professional edge to theoretical knowledge.

Being intrigued with the future of technology and the trends it can follow, I have been active in attending and participating in workshops, picking up skills relevant to the emerging problems and global challenges. I have attained specialization in Deep Learning by Andrew Ng, and also “Data Engineering, Big Data, and Machine Learning on GCP” Specialization by Google Cloud which equipped me with Big Data tools and different processing frameworks that are offered by Cloud. I have also completed courses “Introduction to Probability and Data”, and “Inferential Statistics” by Duke University on Coursera in which I carried out assignment work in R programming language. I have been an active participant in various college-level events and NGO drives, such as a state-level Hackathon, National-level Tech fest, 2018 of Gujarat Technological University, national-level event Run for Green Environment. These events sharpened my leadership and group skills.

Given my academic background, pursuing the Master of Applied Computer Science at Concordia University will enhance my profile and learning experience. Concordia University is home to some of the best AI researchers in the world such as Dr. Ching Yee Suen and Dr. Leila Kosseim. Both have inspired me with their scholarly work in the field of Computational linguistics. Their publications revolve around text processing and pattern recognitions which align with my interests and professional goals. It is one of the reasons I decided to build projects based on NLP



and choose “Voice Enabled Forms Submission” problem statement in the Hackathon as mentioned before where I developed an android application through which even blind people can fill forms with just voice communication. Also, University has state-of-the-art Labs and research centers including the “Centre for Pattern Recognition and Machine Intelligence (CENPARMI)” which focuses on problems associated with document analysis, text recognition, etc. Furthermore, there are many courses within this graduate program, such as Applied Artificial Intelligence, Machine Learning, Statistical Natural Language Processing, Advanced Database Technology and Applications, and Distributed System Design, that can be used in any area of the industry. Specifically, Machine Learning has made immense progress in recent years and has brought many benefits to various fields like the Medical/Health domain, Agriculture, Education, Entertainment, Finance, Business, and E-commerce. I wish to pursue the Master's program in Applied Computer Science at Concordia University to be a part of this high-potential field. I wish to delve into this field, and learn required concepts and skills such as Advanced Programming, Databases, Machine Learning, Natural Language Processing. My desire to study this field further is only strengthened by my confidence in the academic rigor offered by your esteemed University, thus I seek admission to the graduate program.

Sincerely,
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