

Statement of Purpose

In my first machine learning project about handwriting digital number recognition using CNN, I reconstructed the Lenet-5 using tensorflow with an accuracy of 0.85, and was amazed by its practical application in helping bank clerks to identify the values of bills. The experience inspired me to explore the field of machine learning and develop something that can positively influence people's life. I would like to further study in the areas of data science and machine learning.

I took a wide range of advanced courses in both mathematics and computer science during my undergraduate study, and earned a high major average score of 89 (top 5%). Not only did I perform well in the courses, I also did many extracurricular projects. I once worked on a project funded by National Natural Science Foundation to help detect the anomaly of an airplane engine component. In that project, I deduced out all the formulas in each step using the chain rule and matrix derivative that I just learned from advanced algebra and mathematical analysis. This experience gave me a sense of achievement and strengthened my confidence in this field.

I started to pay more attention to the field of data science after I completed a project on Chinese Airports Evaluation in Stochastic Process course. I led a team of five people through obstacles including collecting tens of thousands of data points as well as storing and managing them. After self-study, I learned to write crawler by Python and store the data sheets by MySQL. By applying data analyzing techniques like random forests, we gained some results that can give us great guidance when we want to travel by plane in the future. After that, I became more interested in data science because I could bring mathematics and machine learning knowledge into reality and benefit people's life.

To gain more comprehensive capabilities in data management and analysis, I interned as a data analyst at one of China's most famous companies, Alibaba. I learned to use Tableau proficiently to analyze reports and build models such as Preselling models using machine learning methods, which can predict the first day-sale of a specific film 10 or 20 days before. From this experience, I gained a deeper understanding of how to apply the theory of data science to solve practical problems. And I found that the biggest difference between theory and industrial usage is that we should take careful consideration into the background knowledge in reality while the conditions are idealized in the theory.

The MSc Data Science project is of particular interest to me because it provides students with an opportunity to apply the theoretical knowledge through projects cooperating with industry-leading companies like Facebook and Telefonica, which would be invaluable to my future career. Based on my academic achievements and research experiences, I have confidence in my ability to complete a Master's with honors at your university and I sincerely hope you look favorably upon my application.