I wish to apply the Data Science Master's Program as I believe this will provide the basis for me to progress into a career with great potential. Data science is a mixture of Mathematical and Computational Science. In the first place, I took a variety of courses in Information and Computing Science, which gave me not only the necessary mathematical background (e.g. Advanced Algebra, Propbability Theory, etc.), but also extensive programming experience (e.g. Matlab, C++, Java, etc.). Beyond the curriculum, I also joined the ACM-ICPC club to get more programming training, where I got trained for the algorithms (e.g. Greedy Algorithm, Recursion, Dynamic Programming, etc.), and competed with my teammates in CodeForces weekly for one and a half years. During that time, I sensed the beauty of algorithms. I found that computer programming was always a simulation of the real world, which holds a great fascination for me.

Then, the beauty of data interested me. I participated in the Mathematics Contest in Modeling when I was a freshman. I chose the topic *Migration to Mars: Utopian Workforce of the 2100 Urban Society*, the goal of which is to design an economic-workforce-education system and give practical advice to the future government in Mars. In the first place, after processing the data from the United States census bureau and the World Banks, I determined 7 indicators (e.g. Engel coefficient, Human Development Index and Maternity Leave Strategies, etc.) are especially related to three given factors(Income, Education, and Social Equality). In the second place, I eliminated the dependence in these indicators and figured out the contribution of each indicators respectively using Principal Component Analysis. Then, I established the Goal Programming Model in Matlab to worked out the specific number of all the indicators to put forward a practical policy proposal. Finally, a sensitivity analysis was made to test the robustness of the results. I complied the final report with LaTeX and my team were awarded with the Honorable Mention(top 30%). This experience exposed me to solving real-world problem with my mathematics background and programming skills in a team environment and consolidated my determination to pursue a degree in data science for graduate study.

I have also taken the lead on a project of Sentiment Analysis, a branch of Natural Language Processing, from November 2016 to November 2017. During this project, I judged polarity from Chinese user comments based on Deep Learning. The challenge is that Chinese do not have a trivial word segmentation process, unlike English using the space character as a word divider. My teammates and I downloaded and processed over 50k pieces of data and split it into training and testing dataset with a 4:1 proportion, and used algorithms such as Word Vector, RNN and LSTM with Tensorflow in Python and finally achieved the accuracy of 0.9. I also designed a website to present the project in the Software Innovation Competition in Shandong Province, where I won an Excellence Award in January 2018.

Next, I interned in the Ministry of Information Industry at the First People's Hospital of Jiande, where I analyzed case records and extract information (e.g. the names of diseases, the dosage of drugs, etc.) based on Named Entity Recognition. The project was in collaboration with Alibaba, and the excellence of this project brought me to the internship opportunity in Alibaba Cloud this summer.

During the internship in Alibaba Cloud, I created a mapping between the hospital database and Fast Healthcare Interoperability Resources（FHIR）database. The mapping defined as the pseudo-code, which demonstrated how specific values can be retrieved from the hospital database, can be used by SQL developer directly. The difficulty was that the field names in the hospital and FHIR were not bijection so I invested quite a lot of time in grasping the meaning of the two databases to map them. I also realized that the efficiency and revenue are always top priority in an enterprise setting. For example, after submitting my task, the boss asked some practical questions: manual matching is inefficient, can we use machine automatic recognition? If yes, what is the proportion of data which can be matched automatically? Thinking of these questions enriched my experience in normalization and data analysis and taught me to work in a team in a professional environment

I aim to become an Algorithm Engineer in the future, my success in course work and my passion for research demonstrated to me that I had both the interest and ability to enter this challenging and rewording field. Before that I need to get into a master's program because I need to consolidate my

Machine Learning foundation, learn distributed computing frameworks and further enhance my ability to program in Python. The skills I mention are all written on the Recruiting Website and I have to master them to improve my competitiveness in the workplace. What's more, I also need to improve my ability to do scientific research, such as reading English literature. This is because, during the internship in Alibaba Cloud, when my tutor asked me to read and reproduce the code in the paper, I usually felt a little difficult.

However, I believe study in your school will lay a solid foundation on statistics and computer science for me. Furthermore, The University of Manchester also provided students with an Masters Project, this will definitely distinguish me from other competitors. In addition, the courses such as Introduction to Deep Learning, provide me with a lot of chances to keep trend with cutting-edge knowledge in data science. I can get advice from the world famous professors, which will help me a lot in my future career path. Therefore, I hope to pursue a master degree in Data Science(Computer Science Data Informatics) at the University of Manchester.