The IoT is an emerging field in the 21st century that revolutionize human life. Obviously, there will be a vast world for those concentrating in communication or network to show themselves with the increasingly fast development of the IoT. Seeing the numerous opportunities for people to make a change in this field, I hope to be one of them making fruitful achievements.

I choose TU Delft since I love its culture, academic atmosphere, and rich scientific research resources. This school has a long history but also has advanced scientific research technology and scientific research concept, which is very rare. TU Delft's emblem is meant to follow in the footsteps of Prometheus and contribute to the development of human civilization by constantly innovating and developing better technologies. I greatly appreciate TU Delft's unpretentious and dedicated spirit of scientific research. In its annual evaluation of the scientific research level, TU Delft always achieves excellent results, reflecting its excellent academic atmosphere and faculty.

Moreover, TU Delft's papers are among the best in the world in terms of quality and citation. I think I'm a person who needs a lot of guidance, so I think the TU Delft atmosphere can infect me. With the company of excellent classmates and mentors, I can cooperate with them, learn from them, and try my best to create advanced scientific and technological achievements jointly. I can also improve my logical thinking and innovation ability, which will greatly promote my future work.

To achieve that goal, I learned with my best efforts in most courses, so that my cumulative GPA is 89.5/100 for the first three years; while from the mathematical modeling competitions and course projects I participated in, I grasped essential research and teamwork skills, which supported my later experiences as a research assistant. I won three prizes in mathematical modeling competitions and two Second-class scholarship for study.

High Robust Indoor Positioning System Based on AOA was my first research at the Dalian University of Technology. Thanks to my former competition and project experiences, I could find proper methods from a large number of papers easily. By learning from the methods for reference, I modified them to make them useful in the research, and helped achieve the accuracy of the ArSeRoL system, the new type of indoor positioning system via Wi-Fi signals, to 40 cm. Encouraged by the achievements I made, I became more determined to pursue my next research.

In the research *A Data Backhaul Method for Low-power Ocean Sensing Data (Multi-hop LoRa Network)*, I have already got familiar with my supervisor and other members and cooperated smoothly during that research. My main duty was to implement the functions proposed by my senior. When encountering the restraints of hardware and the specificities of LoRa signals, I would communicate with my senior proactively for whether we should modify or delete the functions; Every time one of us came up with new ideas, we would also determine together whether to implement the idea based on the requirements of the research and the characteristics of LoRa. As a result, we established a new type of LoRaWAN mesh networks with functions that we were all satisfied with.

As for the most recent research *LPWAN-based Patient Tracking & Alerting System Facing COVID-19 Pandemic*, we are inspired by the BeepTrace system at first, a system based on smartphones with high hardware requirements. A challenge for us is to create a new system with a low price, low energy cost, and small volume. In response to the challenge, we transplant some of the client-side functions to region servers and apply the LoRa. Considering the side-effects of LoRa and the limitations of the simple hardware of mobile devices, we design a communication protocol to make sure every trace is recorded. This research is still in-progress currently, and is expected to achieve what we plan to realize. If all goes well, we will design a system with 5 parts – mobile devices carried by users, fixed devices (marking locations, a shifted mode of

mobile devices), region servers, diagnosticians (designated medical institutions), and geo solvers (authorized geographic location query agencies). It can issue the pseudonym list from the geo solvers to terminal mobile devices after querying, match the pseudonym with the user to determine whether the user is risky. We set the SF value of LoRa signal between mobile devices and fixed devices to 7 to improve the speed, Set the SF value of LoRa signal between fixed devices and fixed devices to 12 to increase communication distance, and maintain the blockchain recording trace information via Wired Internet Communication between all region servers, diagnosticians, and geo solvers. We are going to realize the system by modifying existing methods and creating new methods.

What is more, because it keeps pace with the times and its innovation, and I'm doing all the coding work and most designation, I plan to use the *LPWAN-based Patient Tracking & Alerting System Facing COVID-19 Pandemic project* to publish a paper and submit it to my university as my graduation design.

Since I have participated in enough research, projects, and competitions, I already have extensive experience in learning and practicing in groups. Being able to apply what I have learned from textbooks, I do have the confidence to say that I am well-prepared for my master's studies. In my future studies at your program, I will continue reading pieces of literature like what I did in the past, which will help me get in touch with advanced perception in my area of interest. If there will be chances, I will probably be a research assistant or intern to accumulate the necessary experience.

Instead of my curricular works and researches experience, I participated in many extracurricular activities. I once worked in the student union, responsible for the cultural exhibition board, opening ceremony rehearsal of the sports meet, and some other jobs. However, because of the burden of study, I quitted it finally. And I have participated in some social practices, whose topics include building a clean network environment, research on the school canteen, prevention of drugs and AIDS, targeted poverty reduction, and so on, about twice a year. I have also participated in some cultural activities such as chorus competition and New Year gala performance.

After graduation from your program, I wish to be a cyber-engineer at a top enterprise like Apple or Alphabet, upgrading my technical skills, and generalizing my perceptions. With 3 or 5 years' working experience, I will already be mature enough and become a skilled staff with an extensive network of contacts. Afterward, as creative management personnel, I hope to try focusing on some pilot projects on the most hotspot issues with my team, making enough profits for the company. Only then I will be truly prepared for creating a new startup that cooperates with other companies.