**Statement of Purpose**

**Motivation**

During the summer vacation in 2017, I traveled to the U.S. and visited UC, Davis for the first time. I was drawn to the gorgeous architecture and beautiful scenery at UC, Davis. The thought of studying at UC, Davis came to me after the visit. After conducting some research afterward, I found that the M.S. in CS at UC, Davis is a great fit for me, as I can make full use of my experiences to better understand the theories taught in this program. In return, the prestigious faculty and wide platform of UC, Davis will provide me with the opportunities to study in-depth specialization about this subject. This is why I am motivated to pursue the M.S. in CS at UC, Davis.

**Preparation**

I accumulated a fair amount of knowledge during my undergraduate studies and developed many interdisciplinary skills from my experiences in different areas. I believe I am well-qualified for the M.S. in CS at UC, Davis because of my strong will, hands-on skills, and teamwork spirit shown from the following experiences.

My knowledge of Machine Learning mainly derives from my undergraduate courses and academic competitions. In 2019 Mathematical Contest in Modeling, I led my teammates to complete a project about Opioid Crisis. We analyzed the data from NFLIS and found the growth pattern of drug reported quantity and the important demographic features to make a breakouts prediction. Besides, in my final projects in *Introduction to Data Mining* course, I made a prediction for NBA players’ salary by analyzing the correlation between their performance and earnings. From these experiences, I become familiar with the process and methods of Mechine Learning, which could be greatly valuable to the Artificial Intelligence and Machine Learning (AIML) group at UC, Davis.

Since my sophomore year, I have conducted research in Inplus Lab and focused on Blockchain technology and its application. I proposed a two-layer Stackelberg Game data trading mechanism in Blockchain-based Internet of Vehicles and evaluated the robustness and efficiency of my algorithms by implementing several smart contracts on Rinkeby testnet of Ethereum. I completed a paper *Blockchain-Based Digital Goods Trading Mechanism in Internet of Vehicles: A Stackelberg Game Approach* with my colleagues and submitted it to 2020 IEEE Cloud. I also participated in *Perishable Digital Goods Trading Mechanism for Blockchain-based Vehicular Network*, and published a survey *Application of Blockchain in IoT Data Trust and Information Available Technology*. The research in Inplus Lab not only helps me to master Blockchain technology, but also deepens my understanding of Game Theory, Trustworthy Systems, Security and Privacy, *etc.*, which inspires me to explore more of these topics at UC, Davis.

In junior year, I put into practice knowledge of Reinforcement Learning while interning in the Institute of Automation, Chinese Academy of Sciences, and participated in StarCraft team to build StarCraft II Learning Environment. I trained the soldiers with the Multi-Agents Deep Deterministic Policy Gradient algorithm and improved the winning rate of soldiers from 26% to 43%. As I used Reinforcement Learning algorithm to train agents in a game, I believe my work in this internship matches well with the topics of AIML group. From this internship, I picked up more knowledge in Reinforcement Learning, which inspires me to integrate them into other studies in the future.

**Interests & Goals**

If admitted with honor, I am inclined to work in AIML group and Computer Graphics and Visualization Research Group to make full use of my experiences. In the short term, upon obtaining my Master’s degree, I expect to complete my program with excellent performance to consolidate my knowledge. In the long run, I would like to set up my own company and promote promising products to better our lives. I firmly believe I can lay a solid foundation and learn useful skills at UC, Davis to achieve my dream.