**Program: Computer Science and Application**

It is my constant belief that that interest is the best teacher. Everything in the world is displayed in thousands of facets and on hundreds of levels; the bursting out of a person's potential usually occurs from a tiny point in that person. If someone finds this point, he is close to being successful. If someone is still looking for the point, he is half way toward success. I used to be a person engaged in the process of questing for success until I came into touch of the concept of the "computer vision", an area that might affect the whole course of my life and become my most favorite subject. I call it my most favorite because it has aroused, is arousing or will arouse all forces and capabilities inside me to devote myself to this science that obviously enjoys a bright future.

I first got to know the concept of computer vision when I was helping with a promotional exhibition for the Chinese King handwritten Chinese recognition system during a summer vacation when I was a sophomore in college. This part-time work offered me the opportunity to delve into the basic principles of computer recognition of handwritten characters. I've learnt that the computer vision simulates human eyes in taking in various information, due to its higher definition and objective quantitative measurement, it is applied to a wide range of fields. It is a very fresh concept for me and attracted me deeply.

In order to deepen my understanding of the nature of this new technology, I have read lots of papers and reference book in this field, and was the only undergraduate student to participate as an assistant in a computer vision research project. The project was about using the computer vision technology to detect defects in cloths and then categorize and remove the defects. Though the project had a high demand on my specialty skills and was very difficult for me, I nevertheless finished the project successfully within the time limit set up by my supervisor, and I was highly praised for it. The project gave me the first taste of success in a field that I love, providing me with experience as well as confidence and motivation.

With the development of theoretical researches, more application prospects of computer vision emerge before me, such as the automatic harvesting farm machinery, farm produce quality inspection, quality control of industrial production line, etc, the intelligent traffic system (ITS), in particular, has the most development and expansion potential. The intelligent traffic system is an important development direction for the traffic controls in the 21st century. The economic growth and rapid urban development inevitably brings heavy pressure on the urban transportation, and ITS was proposed to solve this increasingly serious traffic problems.

With ITS, traffic administrative authorities is able to monitor the traffic flow, and control and manage the traffic signals so as to direct the traffic, detect vehicles that violate the traffic rules, prevent and dispose traffic accidents in a timely fashion. Individuals can also use the information provided by the ITS system to make outgoing plans and driving routes so as to arrive at destinations in the soonest possible time. The application of computer vision as a key technology in traffic controls has become a hot subject in recent years, because vision is still one of the best ways to measure traffic conditions.

Since I have done systematic research in this field, I now choose The Functions of Computer Vision Technologies in the Intelligent Traffic System as the subject of my graduation thesis. In this paper, I will present a vehicle-inspecting algorithm based on background deviation as a way to check vehicles in a closed-circuit television monitoring system. Via counting the traffic flow on multiple driveways and recognizing the sizes of vehicles, this algorithm provides real-time information about traffic conditions. This method is more reliable and stable than the traditional methods. I have discussed this concept with my supervisor who has given his eager confirmation of my project.

Though I've made progress, I become more and more aware of my lack of knowledge in both the depth and width of theories in this field, and the large gap between China and the advanced world level in the field of computer vision. The United States has been leading the world in the researches of this field, going to the US to learn its advanced technologies and then apply what I've leant in China's researches the computer vision is a imminent dream.

I am quite confident that I will be able to successfully complete my studies in the US. Four years of specialized study in computer has laid a solid theoretical foundation, fostered me a strong logically reasoning capability and the ability of solving academic problems independently, most important of all that I've found my own highly efficient learning method. In addition, my excellent English proficiency will facilitate my studies there greatly, 2,380 scores in GRE and the winning of third place in the English speech contest of college students in Hubei province offers me the source of confidence.

I am quite fortunate that I have found the standing point to realize my life value just as I about to start my maiden voyage, my dream will serve as the lighthouse to guide my navigation in the boundless sea. Archimedes once said: "Give me whereon to stand, and I will move the earth." As for me, the standing point is my determination to devote my whole life to the research of computer vision, and the earth is the bright future of the computer vision in China and the world.

**Recommendation Letter**

**To whom it may concern,**

As the Director of the Department of Computer Sciences of Wuhan University of Technology, which is one of the most prestigious engineering universities in China, I deem it a pleasure to recommend Mr. Nathan Wang, one of the outstanding students in our department for admission and assistantship you're your graduate program

Since his enrollment into our department with remarkable entrance scores, Wang has embodied the fine character of strong inquisition and industriousness in learning, which has gained him significant academic success during his college years. I am aware of his distinctive academic performance as reflected in his transcripts. He maintains a very high GPA that places him in the top 5% out of 150 through the past 3 years, winning scholarships of the department almost every year. In the College English Speech Contest organized by the Teaching Committee of Hubei Province, he excelled most of other contestants, winning the first prize in the Region-wide preliminary contest, and the third prize in the final of the provincial level, being the sole participant representing our university.

I have also discovered him to be perseverant and enthusiastic in studies and extracurricular activities. During the Military Life Experiencing period, a compulsory training program for all Chinese college freshmen upon their immediate entrance, he was granted the title of Excellent Trainee thanks to his painstaking training efforts, though the training was extraordinarily rigorous and demanding. In the past college years, he has enthusiastically taken part in many students' societies, such as Computer Society, Road to American English and Literature Garden, etc, which has both seen his versatility and organizing ability by serving in quite a few positions.

Speaking of his organizing ability, I have to mention two well-known events under his active involvement and organization. One is the College Computer Festival of Hubei Province and the other is the Science and Culture Week of our school. In the first one, he was one of the chief representatives from our department to undertake this provincial level activity. His enthusiastic involvements in liaison, coordination and the contestants' performance evaluation had won him the honorable title of Active Organizing Participant specially granted by our department for this important occasion. In the second one of Science and Culture Week, organized in our school in 1999, he was a chief organizer. And it was so successful that it attracted more than one thousand students to participate, who were all satisfied with this event for the opportunity of a better understanding of the past and future of science in China.

As the Director, I am deeply impressed and moved by his capability of organizing and his sense of involvement, which have been explicitly demonstrated through all his participation in these activities

A bright young man, with blazing intelligence, energy, and determination, Mr. Wang deserves my first-rate recommendation. Thus, I would unqualifiedly recommend him for admission into the Ph. D. program at your university and I will appreciate your sincere assistance to his admission.

**Sincerely yours,**