

Personal Statement

When it backed to ten years ago, a young boy received his first PC as a birthday gift. It was at that time that the seed, breeding automation and robotization, was sowed deeply inside his heart, and that boy was me. Just like everyone at his teens, I was absolutely a net bug, totally occupied by a fantasy Chinese Kung Fu video game. Unlike other teenagers in this age, however, games did not affect my academic performance, and, as a result, I kept my top ranking both in virtual world and in academic education.

How could a good learner played/s games well simultaneously? The key was that I developed my own virtual AI player who acted and responded the same as I did in flesh. The core of the matter, making computer imitate human thoroughly, is not teaching them how to move, but how to think. I combined image pattern recognition methods with robust acting decision-making policy, which can not only assist me to operate more accurately and faster, but also guide players accomplishing mechanized routine. I was enthusiastic about automation and chose it as my undergraduate major.

Fortunately, I filled my brain with Automatic Control and Signal Processing in Beihang University for 4 years. Meanwhile, I also specialized in image processing and pattern recognition in my college, which introduced modern intelligent algorithm like Neural Network and Deep Learning to me. In addition to basic systematic courses, I started to focus on utilizing big data and CNN to recognize sign language (body movement) based on Electromyographic Signal (EMG). I developed EMG processing and seven layers CNN algorithm by Python(Tensorflow) for 2 years, successfully distinguishing 200 common sign languages for independent person and founded our entrepreneurial corporation.

The project experience in my undergraduate aroused my keen interest on Machine Learning. Now, I attend the master degree of Control Science and Engineering in Beihang University, majoring on Recurrent Neural Network (RNN) time series detection. On March 20, 2018, the first time automatic car hit a person and killed him in Arizona, America. In addition to sorrow, I started to believe that a pedestrian-safety testing system for unmanned cars was extremely urgent. Fortunately, the safety monitoring can be achieved by visual tracking monitoring .Now I am concentrating on image pedestrian detection algorithm based on LSTM and attention model, while my current Lab lacks the most state-of-the-art research and advanced computing equipment.

Thanks to Department of Electrical and Computer Engineering in VT, one of the most prestigious CS department all around the world, my research gets more tangible, because the department focuses on Computer Vision and Machine Learning and MR. Jia-Bin Huang had rich experience in the field of target detection, which directly supports my goal. Therefore, I intend to apply for a Ph.D. degree in VT in ECE. After my graduation, I will join HKUST in Hong Kong, doing R&D as a scholar and starting my entrepreneurship.

I am delighted and grateful that ECE Mr. Jia-Bin Huang provides me with a opportunity to study on Machine Learning and object testing. If I had the privilege to join you and contribute to Neural Network research, I would build up the generic vision testing system for automatic vehicle and other industrial control processes and apply it to market. I am expecting to meet you in Virginia Tech next summer.