

Individual Capstone Assessment

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My senior design project is an application of face mask recognition. This is an application to check if anyone in the crowd is not wearing a mask. Generally, manual supervision is used to check whether the crowd is wearing masks. My senior design uses deep learning models to detect whether the crowd is wearing a mask. Application scenarios include public transportation, factory, hospitals, schools(UC) and shopping mall(kroger, casio). This project uses the MobileNetV2 algorithm to train the training set and then use VGG and SSD algorithm for target detection.

In my college career, I have two classes that are very unforgettable. They helped me open up the world of artificial intelligence. One is CS5154 Information Retrieval and the other is CS5137 Machine Learning. Both of these two courses teach me some knowledge like convolution operation, padding. These are all necessary for this project. It is based on these knowledge points that I have the inspiration to do such a project.

I worked for the Next Mobility Laboratory of our school which lead by Dr. Ma Jiaqi. Until now I still feel that this internship experience has greatly improved me. During my tenure, I am fortunate to be exposed to the research work of object recognition for intelligent driving. Because I have always been particularly interested in intelligent driving technology before. So I want to put what I learnt from Lab on my project. To make my project more mature, at the same time, it makes me more handy.

Because the Corona virus continues to spread in the United States. People have changed from ignoring at the beginning to gradually paying attention. But there are still a small number of people who don't realize the importance of wearing a mask at the same time spread the virus without knowing it. But there are still great risks in manual supervision. So I was thinking why not let the program help us do these dangerous things with the help of artificial intelligence? This is exactly the original intention of artificial intelligence was designed.

I will separate my project into many small parts and finish them one by one. I hope that my project can quickly identify people who are not wearing masks in the crowd, so this is conducive to management control. If I have the opportunity, I hope to test my project in a public place near the school. Because I don't know if this project can really work in public places. Only after seeing the effect can I know what needs improvement. And in the future, I hope my program can be used all over the world, help everyone to resist this disaster.