PREVENT THE COVID-19 SPREADNESS USING FACE MASK DETECTION IN CNN

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Abstract
Due to the global COVID-19 pandemic, computer vision education has received increasing attention to improve public health services. At the time of death, because a pair of classification and detection are used under the video image, detecting small objects in image processing is a more difficult task. Deep neural network detection has shown useful object detection with excellent performance, namely mask detection. For inevitable natural diseases, it is a unique topic because of the benefits it brings to people. Added mask detection that works with YOLOv3 and can measure real-time performance through a powerful GPU. Then, we have some people who use or do not use masks to train people with mask images but no mask images. The results of detection, location and detection experiments show that the average loss after training for 4000 epochs is 0.0730. After training 4000 epochs, the MAP value is 0.96.

Introduction
The global COVID-19 pandemic has caused epidemics of dangerous diseases all over the world. At the same time, this situation has been criticized and is increasing in all countries announced by the World Health Organization [1-3]. According to this epidemic, the bodies of more than 114 countries developed flu symptoms within 6.4 days (2 to 14 days). Millions of people get sick in one day.In the disaster phase, everyone should raise awareness and of course take some actions on their own. On this issue, the national government, authorities and workplaces must strictly abide by the necessary rules, and constantly measure and protest the health of the people. As a result, these microorganisms move from one area to another and spread the virus. Shake hands, microorganisms in the mouth, and share accessories with others. Today, people who wear masks for their own safety are worried about reducing sprouting and sprouting.Reduce the number of people. Because of this radical theme, we illustrate our work by locating the masks of people who wear masks and people who are not in crowded outdoor areas. Computer vision training is the actual field of image recognition, descriptive image conversion, analysis and results.

Literature survey
Outbreak of pneumonia of unknown etiology in Wuhan, China: The thriller and the miracle.As of December 2019, a complete of forty oneinstances of pneumonia of unknown etiology wereshowed in Wuhan, Hubei Province, China. Wuhan is a primary transportation hub with more than eleven million residents. Most of the sufferers went to the neighborhood community. Fish and wild animals. The marketplaceclosing month. At the countrywide press conference held today, Dr. Dr. XuJianguo, academician of the Chinese Academy of Engineering, and a group of scientists introduced this new typeThis outbreak was caused by the new coronavirus 2019 (2019-nCoV) provisionally named by the World Health Organization. 1 The coronavirus-specific nucleic acid sequence of 2019-nCoV is different from the known nucleic acid sequence of the human coronavirus species. These are similar to certain corona beta viruses identified in bats. 2,3 Virus-specific nucleic acid sequences were found in the lung fluid, blood and throat swabs of 15 patients, and the isolated viruses showed typical corona discharges. virus.The appearance under the electron microscope. In order to better understand the new coronavirus used in the development of antiviral drugs and vaccines, more research is being conducted. We welcome the excellent work done so far. Scientists and epidemiologists ruled out several highly infectious pathogens, including SARS, which caused hundreds of deaths.More than ten years ago and MERS. Due to the outbreak, the Hong Kong authorities quickly stepped up the disinfection of trains and airplanes and the control of passengers, which undoubtedly alleviated

environmental problems. Last month, most patients went to the Wuhan fish and wildlife market. This fish and wildlife market also sells live animals such as poultry, bats, marmots and snakes. All patients immediately received supportive treatment in isolation and quarantine.Among them, 7 cases were severely ill and 1 case died. So far, 42 confirmed patients are from China, except for one Thai patient from Wuhan. Eight patients have been cured and discharged from hospital. Came out of the hospital last week. 2019-nCoVnow has been isolated from multiple patients and seems to be the culprit.

Severe acute respiratory disorder Covid 2 (SARS-CoV-2) and Covid infection 2019 (COVID-19): The pestilence and the difficulties .

Toward the finish of 2019, the development of Chinese Coronavirus 2 (SARS-CoV-2; previously known as New Coronavirus 2019 or 2019-nCoV) illness (COVID-19) caused serious intense respiratory condition, which is a significant worldwide The episode is a significant flare-up. ...A general medical problem. As of February 11, 2020, World Health Organization (WHO) information shows that in excess of 43,000 affirmed cases have been found in 28 nations/locales, of which >99% are in China. In January 2020, the World Health Organization proclaimed COVID-19 as the 6th worldwide general wellbeing crisis.SARS-CoV-2 is closely related to two bat-derived coronaviruses suffering from acute respiratory syndrome-Bat-SL-CoVZC45 and Bat-SL-CoVZXC21: it is through droplets in the air or direct contact between people Spread between and from the transferor. Individuals through beads or direct contact. The normal brooding season of contamination is assessed to be 6.4 days, and the gauge multiplication rate is somewhere in the range of 2.24 and 3.58. -2 (new coronavirus pneumonia or Wuh pneumonia), the most common symptom is fever and then cough. On the chest computed tomography image, the most common finding is the opacity of the ground glass with bilateral lung involvement[4][5].The only SARS-CoV-2 pneumonia case in the United States has responded well to the treatment and is currently undergoing clinical testing in China. Currently, infection control is mainly used to prevent the spread of SARS-CoV-2. However, the health authorities need to continue to monitor the situation closely. The more we understand this new virus and the outbreaks associated with it, the better we can respond.

The study of disease transmission and pathogenesis of Covid illness (COVID-19) episode

Covid infection (COVID-19) is brought about by SARS-COV2 and is a conceivably lethal illness that has caused extraordinary public concern. In view of the huge number of tainted individuals entering the wet creature market in Wuhan. It is conjectured that this might be the source of the zoonotic illness of COVID-19. .The spread of COVID-19 from person to person resulted in the isolation of patients who later received various treatments. In order to fight the current epidemic, human-to-human COVID-19 transmission has been introduced. Unique consideration and endeavors ought to be made to secure or lessen transmission among weak gatherings including youngsters, clinical staff and the older. Side effects, the study of disease transmission, transmission, pathogenesis, phylogenetic examination and the future heading of controlling the spread of this lethal infection.

Existing system

- In the existing method, we only use images to create a model, and only use user input to predict the result. There is no recognition, compare it with the image, and then get the result through image processing[6][7].

Drawbacks

- Accuracy rate is slow
- There is no real-time detection from a video stream

Proposed system

- The proposed method includes the use of CNN with a deep learning framework for video surveillance. Use instead of using a mask.
- Facts have proved that artificial neural network is a powerful feature extraction method. From the original data.

- This study proposes to use a convolutional neural network to design a mask classifier, and consider the influence of the number of convolutional neural layers on the prediction accuracy.

Advantages

- The CNN process includes the recognition and classification of images based on the learned features.In the multi-layer structure, it is very effective for obtaining and evaluating the required graphic image characteristics.
- The forecast is very fast and accurate and can be used in real-time applications.

Conclusion

This article contains research on the use of convolutional neural network deep learning technology to detect real-time masks through alarm systems. This process can provide fast and accurate results for mask recognition. The trained model can use the CNN VGG-16 model to complete the work and obtain results with 96% accuracy.In addition, the study is a useful tool to combat the spread of the COVID-19 virus by detecting whether a person is wearing a mask and issuing an alarm when not wearing a mask. Other tasks include physical distance integration. In this case, the camera can detect people with or without masks, and it can also measure the distance between each person. If the physical distance is not properly maintained, an alarm will be triggered. From CNN and compare the maximum accuracy of each model to improve athletic performance. InsideIt is recommended to identify and identify people wearing masks. In addition, the researchers recommend the use of other optimizers, better parameter settings, fine-tuning, and the use of adaptive learning with data transmission models.

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