

AI Based Covid Solutions: Facial Mask Detection

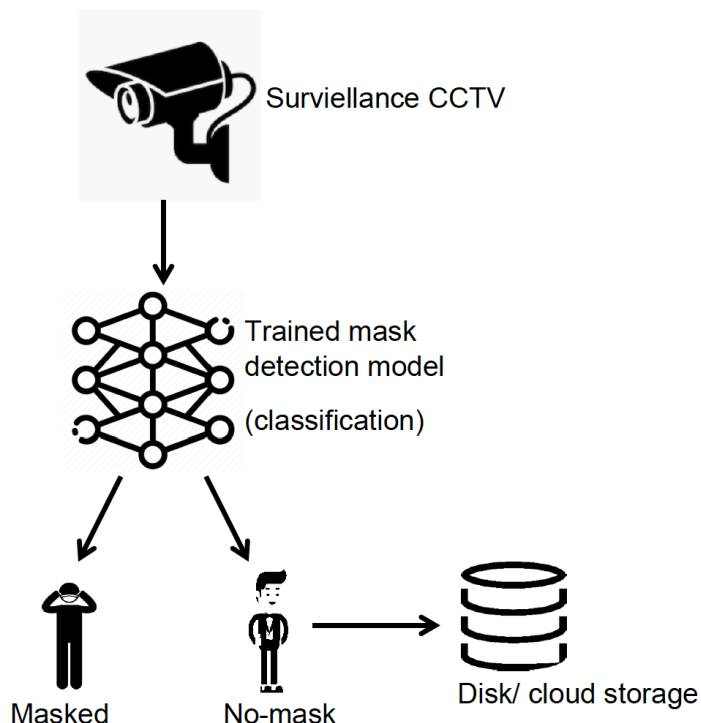
The simulation of human intelligence in machines better known as artificial intelligence is acquiring popularity as it aids scientists and researchers alike in the present Covid-19 pandemic scenario.

AI deals with learning and problem solving and has the advantage of being able to analyze patterns in large data sets, gather insights from them and make predictions at incredible speeds.

Many organizations have already adopted AI and ml based techniques to deal with challenges posed by Covid.

Thus AI-based surveillance tech have the capability to contain spread of Covid-19 to an extent.

Proposed solution



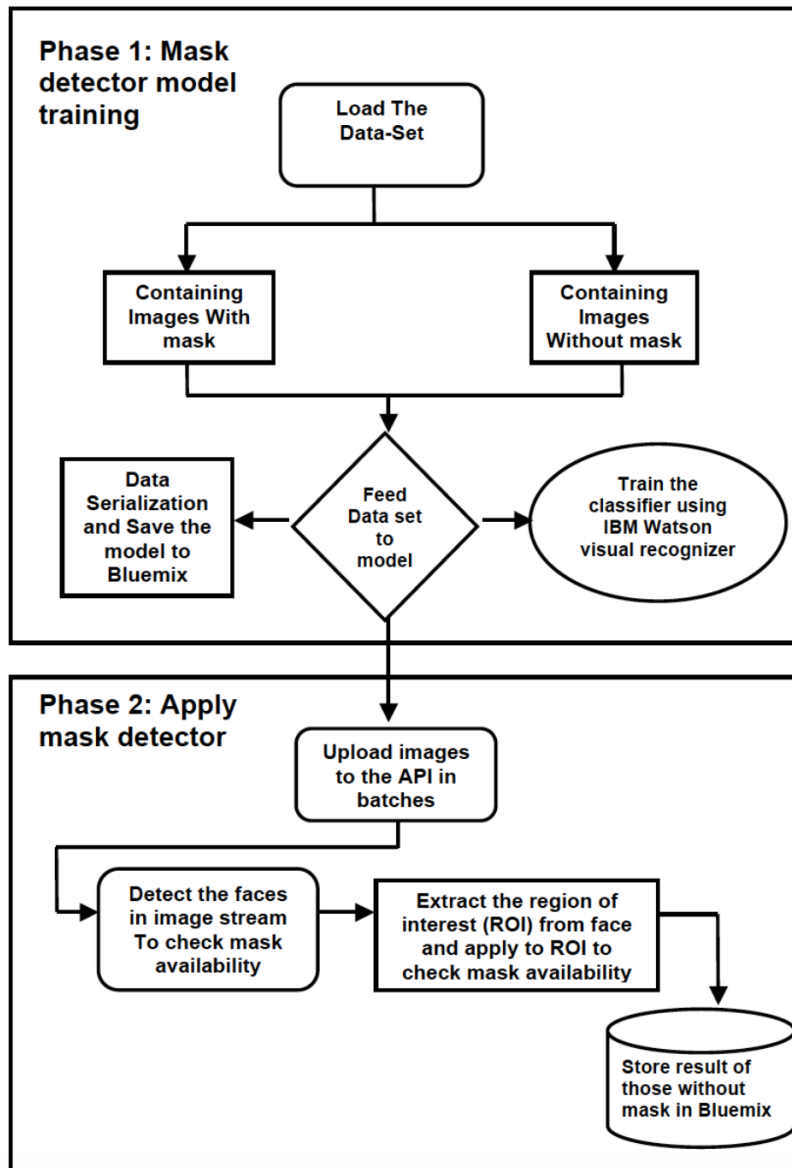
A system that detects individuals not wearing facial masks is proposed.

The idea is to extract images from cctv surveillance footages and detect individuals not wearing masks. The images of individuals not wearing masks are stored for later reference so that it will be convenient to track the practices of individuals within an office/work environment.

^ Fig1. Diagrammatic representation of the system

System design

The system design consists of two phases, namely the mask detector model training phase and the mask detector application phase.



^ Fig2. System design flowchart

Phase1:

In this phase a model is trained to distinguish between masked as well as unmasked images of individuals, this will be achieved in the Watson studio using the visual recognition api.

Phase 2:

This is the application phase in which the system is put to test. From the cctv footages within the organization, images are captured and requests are made to Watson visual recognition api in batches. Once the model carries out classification, the images of the unmasked individuals are saved into IBM cloud for later retrieval and analysis.

Conclusion

This system will effectively detect individuals not wearing masks and can be implemented as a covid-19 preventive measure. It is low cost and can be improved further by training the model by using a more diverse image classification data-set.