Name: Anwesha Roy

Student ID: 24141100

Section: 02

Course: CSE424

Title:

Hypersphere guided embedding for masked face recognition

Paper link:

https://www.sciencedirect.com/science/article/abs/pii/S0167865523002349?via%3Dihub

Motivation:

In this world of modern technology, facial recognition technology is very important in various applications. Many people are working on it. But masked face makes things much more complicated to recognize. This paper is motivated by the need to make improvements in masked face recognition more accurately.

Contribution:

In this research paper, the author tried to create a separate solution for recognizing both masked faces and unmasked faces. They claim that the MFR accuracy will improve by using their methodology “Coupled Hypersphere Manifolds” and “Multi-center Loss”.

Methodology:

The main concept is to create two hypersphere spaces denoting the facial points one for masked faces and another for unmasked faces. Then the author made a “multi-center loss” function to ensure a better representation of the cluster data points between each and every hypersphere. Also, there is a strategy to maintain the space between the hypersphere which is the “Spatial Split Strategy” for preventing the information from one space not to interfering with another space.

Conclusion:

The paper made a significant solution to make masked face recognition more accurate. They also highlighted the negative part of masks on facial recognition methods. Their project will play making significant role in the modern generation because the ratio of the number of using masks is increasing day by day.

Limitations;

1. The paper did not give specific ideas about the network architecture and training details.
2. The paper did not show a proper solution for various mask types and lighting conditions.
3. It does not contain a real-world masked face dataset rather it has only used the publicly available information.

Synthesis:

This paper should work on the real-world face-masked datasets and for further investigation, they should also try to make significant use of their two methodology and make sure that they work properly. Masked face recognition is very important for this generation because of pollution, virus attacks, and several issues, the ratio of people who use masks is getting higher day by day. So, the author should be more serious about making his methodologies work for accurate masked face recognition results.