Domain background:

Facial expression recognition techniques detecting emotion of people' using their facial expressions. This has found applications in technical fields such as Human-computer-Interaction (HCI) and security monitoring [1]

Emotion recognition is the process of identifying human emotion. The existing approaches in emotion recognition to classify certain emotion types can be

generally classified into three main categories:

1. knowledge-based techniques,
2. statistical methods,
3. hybrid approaches.

Problem statement

In online courses, it is hard for the interactor to detect students emotion such as boredom or excitement, which is important in a teaching prosses to detect students understanding or their need to have a break or changing teaching approach.

Algorithms to try:

Dense Convolutional Network

Datasets and inputs:

https://www.kaggle.com/ananthu017/emotion-detection-fer

The dataset has 7 folders for training (happiness, neutral, sadness, anger, surprise, disgust, fear) and 7 folders for testing (happiness, neutral, sadness, anger, surprise, disgust, fear).

It has 5,685 examples of 48x48 pixel gray scale images.

I will use training folders for training my modeling then testing it using test folders.

Solution statement:

Tool attached to zoom for example to detect students' emotion.

Benchmark model:

Using convolutional neural networks to detect emotions from video.

Evaluation metrics:

Accuracy is the proportion of true results among the total number of cases examined. will just work if the dataset is balance if not, we may use LogLoss/Binary Crossentropy.

Project design:

1. Discover the dataset.
2. Analysis the information.
3. Clear the data.
4. Prepare for modeling
5. Try different algorithms and compare accuracy.
6. Deploy the model.

[1] https://www.researchgate.net/publication/284668865_Facial_expression_recognition_-_Review