**University of** 

**Asia Pacific**

**Course Code:** CSE 400-4/1-G1

**Course Title:** Thesis or project

**Subject:** Idea Selection (week-4)

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4th year 1st semester University of Asia Pacific

## **Emotion Monitoring Based on face Recognition**

Humans have always had the innate ability to recognize and distinguish between faces. Now computers are able to do the same. This opens up tons of applications. Face detection and Recognition can be used to improve access and security like the latest Apple Iphone does (see gif below), allow payments to be processed without physical cards — iphone does this too!, enable criminal identification and allow personalized healthcare and other services.

**Emotion Recognition work:**

Emotive analytics is an interesting blend of psychology and technology. Though arguably reductive, many facial expression detection tools lump human emotion into 7 main categories: Joy, Sadness, Anger, Fear, Surprise, Contempt, and Disgust. With facial emotion detection, algorithms detect faces within a photo or video, and sense micro expressions by analyzing the relationship between points on the face, based on curated databases compiled in academic environments.

To detect emotion in the written word, sentiment analysis processing software can analyze text to conclude if a statement is generally positive or negative based on keywords and their valence index. Lastly, sonic algorithms have been produced that analyze recorded speech for both tone and word content.

**Efficacy:**

* Ability to detect the location of face in any input image or frame. The output is the bounding box coordinates of the detected faces.
* Compare multiple faces together to identify which faces belong to the same person. This is done by comparing face embedding vectors.
* Classifying the emotion on the face as happy, angry, sad, neutral, surprise, disgust or fear.

**Advantages:**

* Event feedback research
* Social media exposure through facebook auto tagging
* Increased event security

**Disadvantages:**

* Poor Image Quality Limits Facial Recognition's Effectiveness.
* Small Image Sizes Make Facial Recognition More Difficult.
* Different Face Angles Can Throw Off Facial Recognition's Reliability.
* Data Processing and Storage Can Limit Facial Recognition Tech.

**Update version 2.0**

I read from towards data science what is emotion detection. What will be the benefit of doing this project.

From here I can learn a lot of new things. However, after learning about emotion detection, I understood a lot about deepfake.

Even if I knew the word deepfake, I had no idea.

But now I understand a little bit how image processing, face detection works.

Below is a link to the videos that have been viewed for research.

**Realtime Face Emotion Recognition**

* <https://www.youtube.com/watch?v=fkgpvkqcoJc>
* <https://www.youtube.com/watch?v=DtBu1u5aBsc>