**Summary:**

* These confusion matrix are created from the feature vectors that we got from running the scripts of corresponding APIs.
* There is a column (0) and row (0) for unclassified images.

Kairos:

* Kairos classifies into 6 emotions. They are

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Happy (5) | Surprise (7) | Anger (1) | Disgust (3) | Fear(4) | Sadness (6) |

* A good number of images are not classified by Kairos. (Kairos.xlsx)
* But if we cut off the unclassified section, the confusion matrix shows a good result. (Kairos\_\_\_.xlsx)

Microsoft:

* Microsoft classifies into 8 emotions. They are

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| anger(1) | contempt(2) | disgust(3) | fear(4) | happiness(5) | sadness(6) | surprise(7) | neutral(8) |

* There is no unclassified image as it can detect all these emotions
* But most images are classified to the neutral which is quite oblivious if we think carefully. Let’s say for an emotion there are 20 frames. 1st 10-15 frames are neutral or showing a little emotion. So the collective measure (avg, moving\_avg, mean\_p5) will skew to the neutral rather than the real emotion.
* But in reality the Microsoft shows the best result for a separate image among these 4 applications.

SightCorp:

* SightCorp classifies into 6 emotions. They are

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| anger(1) |  | disgust(3) | fear(4) | happiness(5) | sadness(6) | surprise(7) |

* So it can classify all the images of CKD+ dataset except contempt (2). The dataset contains 7 emotions. CKD+ has no Neutral emotion.
* That’s why unclassified column of AVG and MOV\_AVG is empty. But there is a good number of images which are unclassified in the Mean\_P5 because the threshold is 50 for this one. So sometimes no emotion value crosses over the threshold and results into unclassified.
* If we cut off unclassified and contempt section we get a good result and better than kairos. (SightCorp\_\_\_.xlsx)

SkyBio:

* It can classify

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| anger(1) | disgust(3) | fear(4) | happiness(5) | sadness(6) | surprise(7) | neutral(8) |

* If we cut off the unclassified and contempt(2) we get a good matrix(sky\_\_\_.xlsx)