Weekly Report (21 Sep – 25 Sep)

A Comparative Study of CNN, RNN, and Transfer Learning Models for Facial Emotion Recognition in Gaming

Ayush Gole (x23224100)

MSc in A.I. (MSCAIJAN24I)

Tasks assigned:

1. As we are using facial recognition research on Evaluation matrix.
2. Send research document like practicum 1, ethical consideration form.
3. Write and send research Abstract report.
4. Write EDA report and preprocessing.

Task status and comments:

1. Completed and discussed on 25th meeting. For emotion detection high level presented matrix are suitable
2. Completed
3. Completed
4. Work in progress due to dataset creation, discussed in meeting.

New task(25th sep) for next week:

1. Final evaluation matrix check more in depth with respect to annotation and face mapping as accuracy and classification is not just suitable

Answer: for annotation model intersection over union. We can use algorithms like haar cascades or deep learning model to detect bounding boxes then we can train model which we are using and apply IUO techniques to understand correctly face detected or not.  
for relation between annote and face image visual inspection or confusion matrix is the matrix. One more matrix cohens kappa method in which one set will be checked by me and will be check with original similar to above technique.

1. Find method or algorithm for face mapping like face points polygon  
   apply on data set points randomly to check annotation and accuracy.

Answer: for face mapping I tried mediapipe, dlib(some version isuue stating not able to find) on both Kaggle and local system but unable to install them for some reason in both.  
there are more techniques going currently working on same .

1. Start with at least 5-10 image custom dataset for annotation and basic preprocessing parallelly start EDA report writing

Answer: created dataset for 26 points tried creating annotation files. Preprocessing tried for public dataset they have been augmented and same size of 48x48 so they are better.

1. Send public dataset link:  
   <https://www.kaggle.com/datasets/msambare/fer2013/data>  
   <https://www.kaggle.com/datasets/milan400/ckplus-dataset/code>