

FER project final considerations:

- Here are 2 codes and models one for **FER2013** with an accuracy of **69.6 %** and one for **CK+** with an accuracy of **99-100%**.
- I saved the models and model weights.
- About the **preprocessing**, both datasets were checked and most of them did not use any preprocessing but **'grayscale'**, so 'grayscale' was used and I tried cropping too but it didn't have any effect just made the process go longer.
- Metrics used are **accuracy**, **precision**, **recall**, and **AUC**, and there is a plot for **metrics per epoch** too, also plotted the **confusion matrix** so the model's performance in each facial expression can be seen.
- Both models were tested through **webcam** and the **CK+ model** had a really better performance to detect the facial emotions, there are a few lines of codes at the end of the CK+ model code that let the webcam to test the model.
- **Transfer-learning** and image net were not used, because (ResNet, MobileNet, VGG, ...) and had lower accuracy (about 65%) and took much more time for training so it **wasn't efficient** to use them.