

Real Time Facial Expression Recognition

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Objective : Classify the emotion on a person's face into one of seven categories, using deep convolutional neural networks.

Dataset : FER-2013 (published at the International Conference on Machine Learning (ICML)). This dataset consists of 35887 grayscale, 48x48 sized face images with seven emotions - **angry, disgusted, fearful, happy, neutral, sad and surprised.**



Planned Approach

- **Haar cascade method** -to detect faces.
- Algorithms:
 - **ML : KNN**
 - **DL : Multi-Layer Perceptrons(MLP) and CNN.**
- The Detected emotion will be displayed

Tools and Libraries: OpenCV, Tensorflow

TIMELINE

PHASE 1: Face Detection + Data Preprocessing (Data Splitting, standardisation) + Train test splitting and data preparation

PHASE 2: Apply ML and DL algorithms and compare results.

PHASE 3: Improve the performance by using transfer learning techniques(like VGG).

References

Research Paper: <https://arxiv.org/pdf/1307.0414.pdf>

Dataset: <https://www.kaggle.com/deadskull7/fer2013>

Github : <https://github.com/atulapra/Emotion-detection>

Blogs/articles: [TowardsDataScience](https://towardsdatascience.com/) <https://algorithmia.com/blog/introduction-to-emotion-recognition>