

# Facial Emotion Recognition

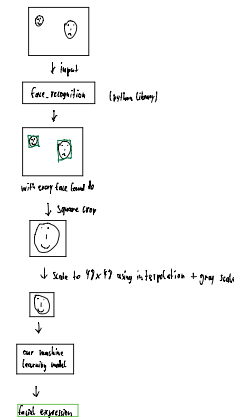
hej

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## 1 Initiation Phase

### 1.1 Main goal

- Develop a “program” for facial emotion recognition from pictures.
  - Emotions: happy, sad, angry, neutral, afraid, disgusted, surprised.
- Include recognition for multiple faces in a picture.
- Include recognition from live video/webcam.
- Achieve at least 65% accuracy.



### 1.2 How to achieve the goal

- Use deep learning for classification - Convolutional Neural Network (CNN).
- Python Tensorflow/Keras.

### 1.3 Project steps

These first three steps constitute the *Execution Phase* 1. The due date for Phase 1 is the 8th of June.

- Training Data:
  - Find first training data for beta testing.
  - Find better data for better/more accurate results.
- Programming Neural Network:
  - Detect faces.
  - Extract faces.
  - Recognize emotion - designing a first neural network.
  - Get first results.
  - Optimize CNN.
- Research:
  - How to optimize the neural network; find better choices for hidden layers and neurons.

The following step is the *Execution Phase 2*. The due date for Phase 2 is the 15th of June.

- Wrapping up:
  - Train final CNN with data.
  - Final test and results.
  - Write a “Read me” for the client

The final step does not include executions of the code. The due date is the 29th of June, giving a buffer time of two weeks for unpredicted tasks or problems to be solved.

- Closing:
  - Prepare a presentation.