Background Study

1) Emoji Classification and prediction in Hebrew political corpus

   This project was done by Chaya Liebeskind from Jerusalem College of Technology. This project aims in efficient prediction of emoji based on the kind of text for better NLP tasks.

   For this they explored two tasks: emoji identification and emoji prediction. Emoji prediction entailed classification task of predicting Emoji based on text and emoji identification was the complementary preceding task of determining if given text message includes emojis. For this they used a supervised Machine Learning approach (logistic regression) for the task. They compare two text representation approaches, i.e., n-grams and character n-grams and analyse the contribution of additional metadata features to the classification.

   The findings they got were metadata improve the classification accuracy in the task of emoji identification and in the task of emoji prediction it is better to apply feature selection.

2) Technical Paper Presentation on application of Cartoon like Effects to Actual Images

   This paper illustrates various techniques for converting images to cartoons. After briefly talking about the existing techniques to apply cartoon like effects on actual images. This paper goes on proposing a new technique in which one can choose two images. First is of the image on which we want to apply effects and the second of the image which contains the style that we want to apply on our first image. This project used feed forward neural network for doing the same.

3) #TeamINF at SemEval-2018 Task 2: Emoji Prediction in Tweets

   This paper describes a methodology for predicting emoji in tweets. The method is based on the traditional bag-of-words model combined with word embedding's. Logistic Regression was the classification algorithm used. This architecture was implemented and tested in the SemEval

2018 challenge. The results from the testing data show that word embedding combined with bag-of-word produces the best F1, whereas the three configurations represented only by bag-of-word produced results that were close to the central work model (Word Embedding + Bag-of-Words).

4) Transformation of Realistic Images and Videos into Cartoon Images and Video using GAN

   The project's goal is to present a solution for converting real-world snapshots or videos into animated photos (Cartoon Images) or video. The previous method of transformation necessitates complex computer graphics and skills. The concept of the paper is based on specific snapshots and videos that are converted to an art form such as painting. Among the techniques available, the application of a Generative Adversarial Network (GAN) called Cartoon GAN was used for the styling of real-world images that uses two loss functions, namely, content loss and adversarial loss, to obtain a sharp and clear image.

5) Image Cartoonization Methods Using LBG, KPE, KMCG quantization

   This paper discusses various methods for creating a cartoonized painterly effect on grayscale and coloured images. To achieve a painterly effect on images, the concept of vector quantization is used. To achieve cartoonized painterly results, the algorithms LBG, KPE, and KMCG are used. The results of applying each algorithm to images are compared based on the time required and the effect produced. The outcomes of the discussed methods can be incorporated into a variety of applications used for movie to comic conversions and digital art software.

6) Using Neural Networks to Predict Emoji Usage from Twitter Data

   This paper believes as emojis have become a more important and standardised part of modern textual inputs, analysing their usage patterns has becoming increasingly important to any modern text system. This paper has framed this study as a text classification problem, mapping input text to the most likely accompanying emoji, with 1.5

million scraped Twitter tweets serving as the training set. Both their LSTM-RNN model and their CNN model outperformed their baseline, with the CNN model achieving significantly higher accuracy and F1 results.

Proposed Methodology

This is the methodology we used for mapping facial emotions to emotes

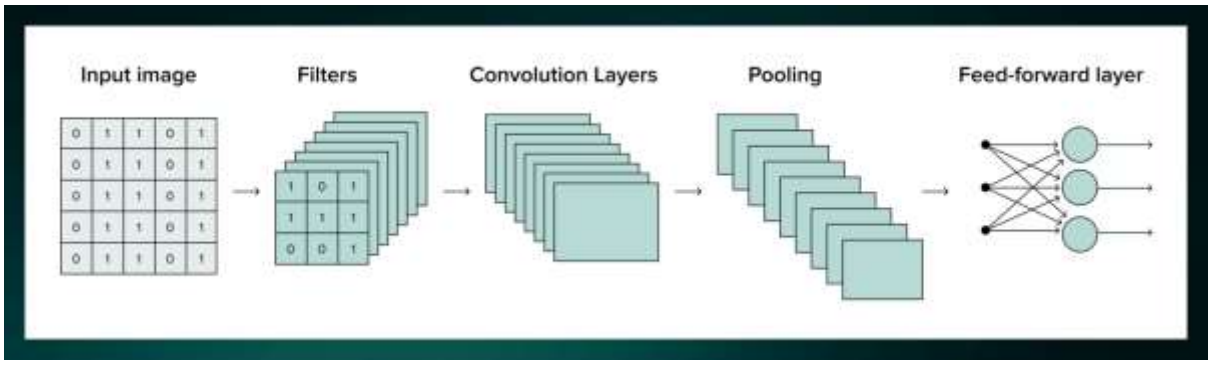
CNN-Convolutional Neural Networks are specialised for image and video recognition applications. CNN is most commonly used for image analysis tasks such as image recognition, object detection, and segmentation.

Convolutional Neural Networks have three types of layers:

1) Convolutional Layer: Each input neuron in a typical neural network is connected to the next hidden layer. Only a small portion of the neurons in the input layer connect to the neurons in the hidden layer in CNN.

2) Pooling Layer: The pooling layer is used to reduce the feature map's dimensionality. Inside the CNN's hidden layer, there will be multiple activation and pooling layers.

3) Fully-Connected Layer: Fully Connected Layers are the network's final few layers. The output of the final Pooling or Convolutional Layer is flattened and fed into the fully connected layer as the input to the fully connected layer.



And these are the main steps that we followed to cartoonify the images:

1)Importing the necessary modules

2)Creating a File Box to select a specific file

3)How does an image get saved?

4)Grayscale image transformation

5)Image smoothing in grayscale

6)Obtaining an image's edges

7)Making a Mask Image

8)Creating a Cartoon Look

9)Compiling all of the transitions

10)The functionality of the save or download button