Emotion Recognition Based on Different Machine Learning Models

Eric Zhang, Wenhan Yang

Introduction

As humans, we can easily detect emotions by facial expressions. However, it's not easy for machines. In our project, we will find existing dataset and train a classifier which the inputs are human face pictures and outputs are one of the predetermined emotion labels (like sad, happy, angry, embarrassing). Then, we will test our classifier on the testing set to see the performance.

Objectives

We are going to implement logistic regression, CNN model and other models in past papers (mentioned in the next paragraph). Then, we will compare these models and find the best model by checking which model gives the minimum cross entropy loss. If time permits, we will use pictures in our daily life and see whether the classifier gives a good answer.

We will read several related papers. The titles of the papers are 'Deep-Emotion: Facial Expression Recognition Using Attentional Convolutional Network', 'Emotion Recognition in the Wild via Convolutional Neural Networks and Mapped Binary Patterns', and 'Facial Expression Recognition with Deep Learning'.

We will use the dataset in the following link:

https://github.com/muxspace/facial_expressions