Baseline Model for Korean Emotion Recognition Challenge

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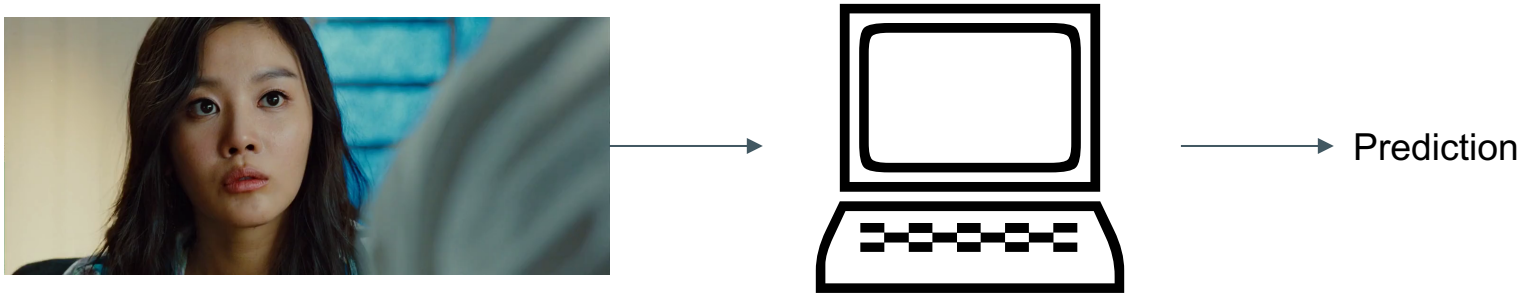
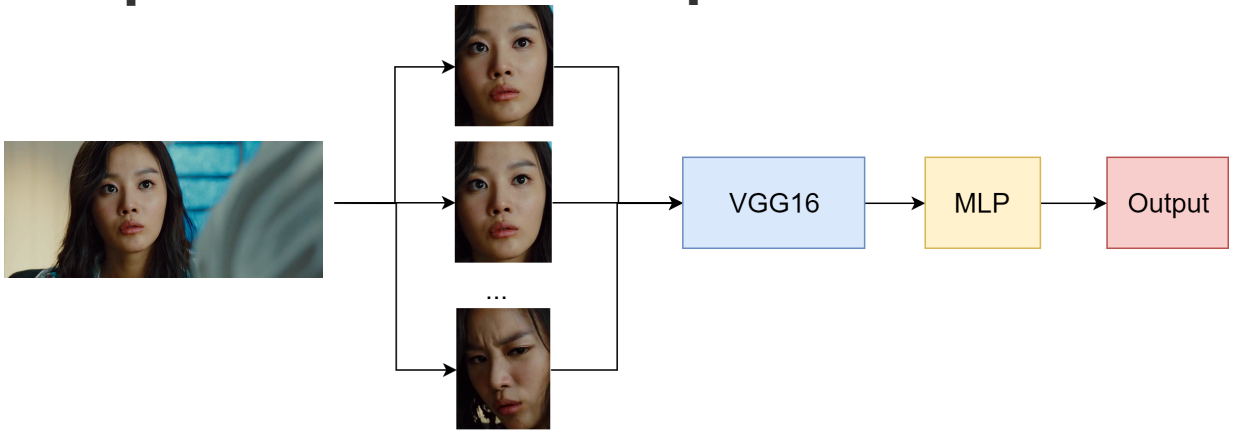
Introduction

- Our challenge is emotion recognition on video clips.
- The face region is the most important region which affects our work.
  Therefore we need to extract the face region in each frame of the clip.



Introduction

- **Our process:**
  - **Extracting frames from video then extracting face in each frame.**
  - **Using VGG16 trained model on VGG Face dataset to extract the features.**
  - **Using MLP to predict the label of the input video.**

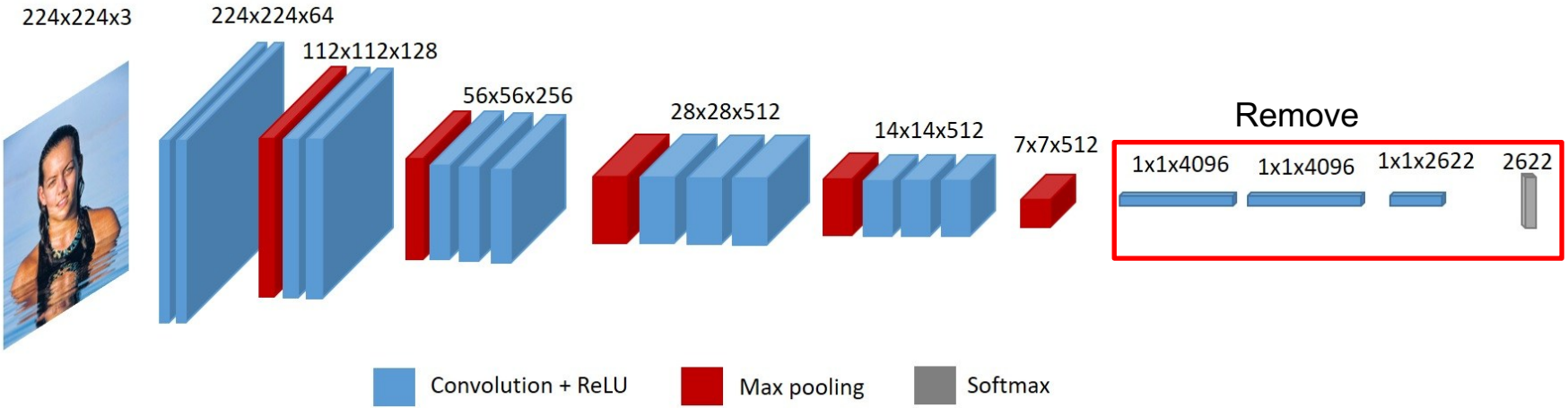


Introduction

We used VGG16 because:

- **VGG16 is the famous network.**
- **There are two version of VGG16: trained on ImageNet and trained on VGG Face.**
- **In this task, we use VGG16 trained on VGG Face dataset. Because we are working on facial emotion recognition, therefore, this model is close to our work.**

Introduction



Demonstration

- Libraries
  - Python 3.6.x
  - Keras 2.2.4
  - Tensorflow 1.13.1
  - moviepy
  - keras-vggface
  - Other libraries in requirement.txt

Demonstration

- **Step 1: run** `get_mainface_frame.py` **file to extract the main face in each frame of the video clip. You need to put the right path of the data folder.**
- **Step 2: run** `data_rearrange.py` **file to create the "data_file.csv" to save the information of data. You need to put the right path of the data folder of Step 1 result. For detail, we copy the sub folder train and val from folder "data_try_out" to folder "data" and then run file** `data_rearrange.py`.
- **Step 3: run** `extract_features.py` **file to extract the feature of the data by VGG16 pretrain on VGGFace dataset. (you can change the other pretrain model in the extractor.py file). Running this file will create sub folder "sequences" in folder "data".**
- **Step 4: run** `train.py` **file to training the baseline model (you can create new model in the models.py file).**
- **Step 5: run** `test.py` **file to testing, it will calculate the accuracy and draw confusion matrix.**
- **Step 6: run** `test_create_csv.py` **file to create csv file for submission the kaggle. We need to prepare the file like folder "data_model_test_kaggle" and rename it into "data" before we run test_create_csv.py**

Thank you and good luck to you