CSCI2470 Project Check in #3 Reflection

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Introduction

Under the exploding development of computer vision, facial recognition is now becoming increasingly important. In fact, facial recognition in today's era is no longer just about whether some specific facials are from an identical person or not in order to achieve the function of facial recognition unlocking. Instead, facial recognition is now evolving towards the direction of capturing changes in facial expressions and making accurate classifications of people's emotions. At the same time, the rise of the idea, meta, has given us some inspirations. If we can successfully capture people's expressions through facial images with the application of deep learning techniques and convert them into corresponding emoji expressions in the virtual world, this would help us build more realistic connections between the real world and the virtual world. This project is made up of two parts. The first part is a classification problem under the umbrella of supervised learning to do emotional analysis , and the second part is simply converting the resulting classifications into emojis which have corresponding emotions.

Challenges

The biggest challenge so far is building up the model since we want to build a neural network which is innovative and accurate enough. Trying different stacks of networks and activation functions is a huge amount of work. In addition, we have not come up with an attractive enough idea to convert our predictions on images into emojis.

Insights

We do not have a concrete result at this point, and our model building is still in progress. However, we do come up with a toy example. The toy model seems not good enough compared to the references though the author writes the references might be equipped with more advanced deep learning skills. However, we will continue working on it.

Plan

We have done the following steps at this point:

1. Having collected data.
2. Having preprocessed data into organized format which could be passed into tensorflow.
3. Have built a toy model and in discussion of having a formal one.

For the rest of the time, we will:

1. Finish building the model and do some modifications on it.
2. Implementing the model and training on our training set.
3. Testing our model on our testing set.
4. Converting our predictions to emojis.
5. Preparing slides, reports, and recording videos for the Deep Learning Day.