Deep Learning and its Applications

Face recognition and expression detection

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CSCI 599: Project Presentation

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Motivation and Goal

Face recognition and Expression recognition have not been integrated.

- Applications:
  - Analyse class reactions
  - Understanding Customer satisfaction
- Goal

  To successfully implement a model which can efficiently identify a person and his expressions.

Problem Formulation

- Input: Image frames from real time video .
- Output: Identity and expression of a person.

Data Availability:

- The Japanese Female Facial Expression (JAFFE) Database - http://www.kasrl.org/jaffe.html
- Fec2013 - https://www.kaggle.com/c/challenges-in-representation-learning-facial-expression-recognition-challenge/data

Milestones

- March 2nd Week - Collecting and understanding available dataset. Preprocessing the dataset.
- March 3 - 4th Week - Prototype and test the network on a small sample of the dataset.
- April 1st and 2nd Week - Training and tuning the network on the entire dataset.
- April 3rd Week - Test and improve accuracy of the network.

Expected Approach and Results

- Preprocessing the dataset to to compensate for pose variations, and means for correcting for illumination variations.
- Using Convolution Neural Network in our architecture.

Results:

A model which can efficiently identify a person and his expressions.