Static Facial Expressions In The Wild: Data and Experiment Protocol

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1   Introduction

Quality data recorded in varied realistic environments is vital for effective human face related research. Facial expression analysis has been a very active field of research and many robust methods have been reported in the literature in the past. However these methods have been experimented on different databases and using different protocols within the same databases. The lack of a standard protocol makes it difficult to compare systems and acts as a hinderance in the progress of the field. Therefore, we propose a facial expression challenge in the *Wild*. Currently available datasets for human facial expression analysis have been generated in highly controlled lab environments. We present a new static facial expression database Static Facial Expressions In The Wild (SFEW) [2] extracted from a temporal facial expressions database Acted Facial Expressions In the Wild (AFEW)[1] which we have extracted from movies. We propose a person independent training and testing protocol for expression recognition.

Fig. 1. Sample images from SFEW database.

While movies are often shot in somewhat controlled environments, they provide close to real world environments that are much more realistic than current datasets that were recorded in lab environments. SFEW has both frontal and nofrontal faces, occlusion and different illumination conditions (Figure 1 displays some sample images from the database) which are very similar to real world scenarios.

2   Data

SFEW has been developed by selecting frames from AFEW. AFEW was collected using a semi-automatic closed caption and subtitle for deaf parsing. The database covers unconstrained facial expressions, varied head poses, vast age range, occlusions, varied focus and close to real world illumination. SFEW contains 700 images and have been labeled for six basic expressions *angry*, *disgust*, *fear*, *happy*, *sad*, *surprise* and the *neutral* class.

The database can be downloaded from:

http://cs.anu.edu.au/few

3   Expression Recognition Experiment Protocol

The database has been divided into two sets in a person independent manner. There are 346 images in Set 1 and 354 in Set 2. There are a total of 95 subjects in the database. The experiment will be two fold, train on set 1 and test on set 2 and than train on set 2 and test on set 1. The evaluation metrics for measuring the performance of FER systems are *accuracy*, *precision*, *recall* and *specifity*.

4   Conclusion and Future work

We have presented a static facial expression database derived from movies. As part of ongoing work we will provide baseline results based on the experimentation protocols discussed. We hope that this database and its experimentation protocol will provide an useful platform for progress in facial expression analysis research.

References

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2. A. Dhall, R. Goecke, S. Lucey, and T. Gedeon. Static Facial Expression Analysis in Tough Conditions: Data, Evaluation Protocol and Benchmark. In *IEEE International Conference on Computer Vision 2011 Workshop BEFIT*, 2011.