Project Aftermath

A good subtitle

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Keywords— face recognition, neural network, emotion

# Introduction

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# Methods

## Creating the face repository

For the creation of the face repository the software called FaceGen Modeller (demo version) has been chosen. The 4 faces for this paper have been created with the software’s randomizer option. In this software it is possible to adjust the faces so called Action Units [Ref Here]. These action units are responsible to different movements in the face itself, in this way it is possible to create facial expression like happiness or anger. For every measuring point with given facial expression and intensity with the needed action units [Ref Here] an XML document has been created for the purpose of reusability, these were used for the creation of the faces presented in this dataset. For each model 2 different set of pictures were created with different intensity of anger or happiness applied.

There sets were created for each emotion: neutral withe the intensity between 0 and 10 %, low with the intensity between 20 and 30 % and high, with the intensity value between 50 and 60 % with 1 percent increments for all sets.

These were then captured with the help of a program called ShareX [Ref here]. For the proper file name format, that contained the user's name, the applied emotion, and its intensity the program Bulk Rename Utility was used.

## Measuring accuracy

## Evaluating the gathered data

More than 30 thousand results were gathered during the test, these contained the data set user's data and evaluating user's data such as username applied emotion, the emotions intensity, and the Euclidean distance within the 2 users. This type of distance was used in the FaceNet paper [Ref here] to represent how closely two face represents the same person. The researchers in that paper used 1.1 as a segmentation threshold. Distances below 1.1 between two faces were considered to belong to the same user.

This project used Python 3 with Seaborn, Numpy and Pandas for data evaluation.

## Smart mirror system software architecture

The given results were originally gathered to evaluate two different face recognition and identification systems. The chosen system was used as the basis for our software architectures face reconition system. This was used to acces user related data from the central database to show relevant information to our users. These were transferred with simple HTTP Request and Responses, using a RESTful sulotion. The given sofware architectures design can be seen in [this] figure.

# Results

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# Discussion

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# Conclusion

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##### Acknowledgment

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##### References

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