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Abstract

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A comparison of facial recognition's algorithms.

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The popularity of the cameras in smart gadgets and other consumer electronics drive the industries to utilize these devices more efficiently. Facial recognition research is one of the hot topics both for practitioners and academicians nowadays. This study is an attempt to reveal the efficiency of existing facial recognition algorithms through a case evaluation.

The purpose of this thesis is to investigate several facial recognition algorithms and make comparisons in respect of their accuracy. The compared facial recognitions algorithms have been widely utilized by industries. The focus is on the algorithms, Eigenfaces, Fisherfaces, Local Binary Pattern Histogram, and the commercial deep convolutional neural network algorithm OpenFace. The thesis covers the whole process of face recognition, including preprocessing of images and face detection. The concept of each algorithm is explained, and the description is given accordingly. Additionally, to assess the efficiency of each algorithm a test case with static images was conducted and evaluated.

The evaluations of the test cases indicate that among the compared facial recognition algorithms the OpenFace algorithm has the highest accuracy to identify faces.

Through the findings of this study, we aim to conduct further researches on emotional analysis through facial recognition.

Keywords
Computer vision, Face detection, Facial recognition algorithms, Neural Networks.