Contribution ID: **77** Type: **not specified**

Performance Evaluation of Traditional and Deep Learning-Based Face Detection Algorithms

Thursday, December 26, 2024 11:45 AM (15 minutes)

Face detection is a crucial task in computer vision, with applications ranging from security systems to human-computer interaction. In this study, we evaluate the performance of three face detection algorithms: Haar Cascade, Histogram of Oriented Gradients (HOG), and Multi-task Cascaded Convolutional Networks (MTCNN). The experiments are conducted using the Labeled Faces in the Wild (LFW) dataset to ensure a robust evaluation. Our results reveal that MTCNN outperforms the other methods, achieving a detection accuracy of 90%, while HOG demonstrates the lowest performance among the tested algorithms. These findings highlight the effectiveness of deep learning-based approaches like MTCNN for accurate face detection in challenging datasets.

Paper Language

English

Contribution Type

In-Person

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Session Classification: Session: In-Person (English Language)

Track Classification: General Track