

RERS-CC: Robotic facial recognition system for improving the accuracy of human face identification using HRI

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ABSTRACT

Human-Computer Interaction (HCI) is incorporated with a variety of applications for input processing and response actions. Facial recognition systems in workplaces and security systems help to improve the detection and classification of humans based on the vision experienced by the input system. **OBJECTIVES:**In this manuscript, the Robotic Facial Recognition System using the Compound Classifier (RERS-CC) is introduced to improve the recognition rate of human faces. The process is differentiated into classification, detection, and recognition phases that employ principal component analysis based learning. In this learning process, the errors in image processing based on the extracted different features are used for error classification and accuracy improvements. **RESULTS:**The performance of the proposed RERS-CC is validated experimentally using the input image dataset in MATLAB tool. The performance results show that the proposed method improves detection and recognition accuracy with fewer errors and processing time. **CONCLUSION:**The input image is processed with the knowledge of the features and errors that are observed with different orientations and time instances. With the help of matching dataset and the similarity index verification, the proposed method identifies precise human face with augmented true positives and recognition rate.

KEYWORDS

Feature extraction; Machine learning; HCI; Classifier; Processing time

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