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Entitled

PRESERVING PRIVACY IN IMAGE-BASED EMOTION RECOGNITION

by

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Abstract

In recent years, image-based facial expression and emotion recognition systems have gained popularity due to their potential to reveal valuable insights into people's psychological states and emotions. These systems can be employed to evaluate customer satisfaction levels in public service provision centres. Nonetheless, there is a possibility that these systems may breach individuals' privacy. The aim of our research is to investigate a privacy-preserving technique, known as Privacy using EigEnface Perturbation (PEEP), proposed by Chamikara and his colleagues. We propose to integrate PEEP with cloud storage encryption to further enhance privacy. PEEP perturbs the facial images by extracting eigenfaces from them and randomizing them with a noise generator to obscure individuals' identities while still allowing the recognition of emotions. The recognition accuracy is ensured through the use of principal component analysis (PCA) which lowers images dimension space. We plan to evaluate the efficacy of PEEP in protecting privacy and explore ways to enhance its effectiveness. Integrating PEEP with cloud storage encryption can provide a robust privacy-preserving solution for image-based emotion recognition systems hosted on remote servers. Our research aligns with the government's strategy to foster the development of artificial intelligence techniques while safeguarding human values and security. The research findings will facilitate the development of image-based emotion recognition systems in the United Arab Emirates that respect individuals' privacy.

Keywords: Emotion Recognition, Image-based emotion recognition, Privacy preserving face recognition, Face emotion recognition, Customer satisfaction.