Informatics Institute of Technology
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EMOTIVO : Face Emotions Recognition for Occlusion and Facial Posture

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ABSTRACT

Facial emotion recognition has been a popular and intensively studied topic in computer vision and Artificial intelligence. This technology has numerous potential applications, including mental health diagnosis, human-computer interaction, robotics and marketing research. Facial emotion recognition is still challenging task due to high diversity of the emotion variations and facial robustness such as occlusion, facial posture and illuminations. Current facial emotion recognition models are not providing accurate prediction for the facial robustness. Lot of pervious studies proposed to achieve this challenge in FER domain by using deep learning. These studies intend that this challenge still are open to solve.

In this study author has proposed novel deep learning based approach by using a CNN with attention mechanism. It contains spatial transformer network (STN) to add more attention for facial regions. The proposed conversational neural network based FER model was trained, tested and evaluated with ALLEXNET, Raf-DB and Fer-13 datasets. The proposed model was evaluated by recall, precision, F1-score and accuracy. The Project "EMOTIVO" bring off better results against existing studies in the domain.

Key Words – Facial Emotion Recognition, Attention convolutional networks, Facial Robustness, Facial occlusion

Subject Description

1. computing methodologies >> computer vision >> computer vision robustness >> facial emotion detection

2. computing methodologies >> machine learning >> deep learning approach >> convolutional neural networks >> attention networks