

Creating a Sri Lankan Micro-Emotion Dataset for a Robust Micro-Expression Recognition System

J. A. L. P. Jayakodi
Dept. of Electrical and
Telecommunication Engineering
South Eastern University of Sri Lanka
lahiruprabhath099@gmail.com

G. G. S. D. Jayamali
Dept. of Electrical and
Telecommunication Engineering
South Eastern University of Sri Lanka
sumuu20@gmail.com

R. Hirshan*
Dept. of Electrical and
Telecommunication Engineering
South Eastern University of Sri Lanka
rajehirshan@seu.ac.lk

M. N. M. Aashiq
Dept. of Computer Science and Engineering
South Eastern University of Sri Lanka
aashiqmnm@seu.ac.lk

W. G. C. W. Kumara
Dept. of Computer Science and Engineering
South Eastern University of Sri Lanka
chinthakawk@seu.ac.lk

Abstract - In interpersonal communication, the human face provides important signals of a person's emotional states and intentions. Furthermore, micro-emotions play a major role in understanding hidden intentions. In psychological aspects, detecting micro-emotions play a major role. In addition, lie detection, criminal identification, and security systems are other applications, where detecting micro-emotion accurately is essential. Revealing a micro-expression is quite difficult for humans because people tend to conceal their subtle emotions. As a result, training a human is expensive and time-consuming. Therefore, it is important to develop robust computer vision and machine learning methods to detect micro-emotions. Convolutional Neural Network (CNN) is the most used deep learning-based method in recent years. This research focuses on developing a 3D-CNN model to detect and classify Micro-emotions and creating a local Micro-emotion database. From the related research work we have considered this is the first attempt made at creating a Sri Lankan micro-emotion dataset. Having a local micro-emotion dataset is essential in formulating more accurate real-time applications focused on deep learning methods. Therefore, in this research, our main objective is to create a Sri Lankan micro-emotion database for future micro-emotion recognition and detection research.

Keywords - action units, emotion recognition, emotion stimulation, micro-emotion dataset, micro-emotion detection