

Sound Event Recognition and Classification Using Machine Learning Techniques

SBK Karunaratna# and MWP Maduranga

Department of Computer Engineering, Faculty of Computing, General Sir John Kotelawala Defence University, Sri Lanka

#D-CE-18-0004@kdu.ac.lk

Sound event recognition and classification are exciting and vital applications in the era of the Internet of Things (IoT). These Sound events carry information that is useful for our daily lives. The perception of surrounding events by humans depends strongly on audio signals. Awareness of what happens in the surrounding environment depends heavily on the ability of an individual to perceive sounds and accurately recognize events related to them. The subject of audio signal recognition is now very popular and has numerous applications. This paper presents machine learning approaches to classify sound events extracted through sound sensors, where the sound signals acquired by sensors will be processed using machine learning algorithms to classify them. The results show that the accuracy of CNN, SVM, MLP classifiers are 82%, 81%, and 79.48%, respectively.

Keywords: *sound event recognition, Convolutional Neural Networks (CNN), Support Vector Machine (SVM), Multilayer Perception (MLP)*