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A METHOD TO CLASSIFY LEARNER FACIAL- EXPRESSION USING ARTIFICIAL NEURAL NETWORK AND SUPPORT VECTOR MACHINE

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Abstract

Computer recognition of human facial expression has been the main inspiration for the affective computing research. Recognizing human facial expression is not a difficult task for human; however it is become a very difficult task for computer. A massive number of published works on affective computing can be easily found in literature but little has been said on how affective computing is applied in e-learning system. This is why the research about developing classifiers to classify learner facial expression is proposed. The research used two image features extraction, color-based and arithmetic mean edge; it also used two classification methods, artificial neural network and support vector machine. The thesis discusses the whole process of the research from data collection, features extraction, classifiers development, training process, and result comparison between the two methods. The research data consists of 400 images that captured learner facial expressions that are divided into 200 understand facial expression class image and 200 not-understand facial expression class image. The classifiers are developed and trained based on the result of the research data feature extraction.

Key Words

Facial Expression Recognition, Artificial Neural Network, Support Vector Machine