

FACIAL EXPRESSION RECOGNITION BASED ON FUSING WEIGHTED LOCAL DIRECTIONAL
PATTERN AND LOCAL BINARY PATTERN

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Abstract

A method of combining Weighted Local Directional Pattern (WLDP) and Local Binary Pattern (LBP) for facial expression recognition is proposed. First, WLDP and LBP are applied to extract human facial features. Second, principle component analysis (PCA) is used to reduce their feature dimensions respectively. Third, both reduced facial features are merged to form the final feature vector. Fourth, support vector machine (SVM) is used to recognize facial expressions. Experiment on the well known Cohn-Kanade expression database, a high accuracy rate up to 91.1% for recognizing seven expressions can be achieved with a person-independent 10-fold cross-validation scheme.

Keyword : Facial Expression Recognition; Local Binary Pattern (LBP);
Weighted Local Directional Pattern (WLDP); Principal Component Analysis
(PCA); Support Vector Machine (SVM)