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عنوان مقاله:

Facial Expression Recognition using Interval Type-2 Fuzzy Sets

محل انتشار:

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خلاصه مقاله:

Recently due to uncertainties regarding to facial features, fuzzy logic is used for facial expression recognition. In this paper we propose a novel method for facial expression recognition which is an interval type-2 fuzzy inference system based on genetic algorithm for optimization of parameters. A Mamdani type-1 fuzzy inference system (T1FIS) with Gaussian membership functions is modeled and expanded into interval type-2 fuzzy inference system (IT2FIS) after assigning a range to Gaussian functions centers. Genetic algorithm is used to optimize parameters of Gaussian functions. We tested our systems with JAFFE and Cohn-Kanade data sets. Results show that accuracies obtained for both data sets are better for IT2FIS with respect to T1FIS. Wilcoxon test also shows that interval type-2 fuzzy method is more efficient than usual type-1 fuzzy method for facial expression recognition.

کلمات کلیدی:

Facial Expression Recognition, Interval Type-2 Fuzzy Sets, Fuzzy Inference System, Genethic Algorithm

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