A Non-Parametric Based Mapping Algorithm for Use in Audio Fingerprinting

Authors : Analise Borg, Paul Micallef

Abstract : Over the past few years, the online multimedia collection has grown at a fast pace. Several companies showed interest to study the different ways to organize the amount of audio information without the need of human intervention to generate metadata. In the past few years, many applications have emerged on the market which are capable of identifying a piece of music in a short time. Different audio effects and degradation make it much harder to identify the unknown piece. In this paper, an audio fingerprinting system which makes use of a non-parametric based algorithm is presented. Parametric analysis is also performed using Gaussian Mixture Models (GMMs). The feature extraction methods employed are the Mel Spectrum Coefficients and the MPEG-7 basic descriptors. Bin numbers replaced the extracted feature coefficients during the non-parametric modelling. The results show that non-parametric analysis offer potential results as the ones mentioned in the literature.

Keywords : audio fingerprinting, mapping algorithm, Gaussian Mixture Models, MFCC, MPEG-7

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