Abstract

This paper presents the comparative study on four computerized skeletal Bone Age Assessment (BAA) methods using the partitioning technique. The four systems studied work according to the renowned Tanner and Whitehouse (TW2) method, based on the Region of Interest (ROI) taken from the wrist bones. The systems ensure accurate and robust BAA for the age range 0-10 years for both girls and boys. Given a left hand-wrist radiograph as input, they estimate the bone age by deploying remarkable techniques for pre-processing, feature extraction, and classification. The four BAA systems differ from each other in the type of ROI used, the feature extraction techniques and finally the classification. The systems output the age class to which the radiograph is categorized (Class A – Class J), which is mapped onto the final bone age. The systems were studied and their performances were compared by varying the partition of the train and test data sets. The systems were judged based on the results obtained from two radiologists.
Comparative Study of Skeletal Bone Age Assessment Approaches using Partitioning Technique


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Index Terms

Computer Science  Image Processing

Keywords

Skeletal Bone Age Assessment (baa)  Tw2  Radiograph  Classification  Partitioning