A Novel Intelligent System for Diagnosing some of Humans' Respiratory System Diseases

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Abstract

This paper presents a novel intelligent system for diagnosing some of humans' respiratory diseases. The proposed system aims to simulate the real medical diagnosing processes. It was adopted in diagnosis on two main parts; knowledge base (KB) and image processing (IP). This paper combines two diagnostic methods; the decision tree (DT) method which used J48 algorithm in WEKA 3.7, and the gray level co-occurrence matrix (GLCM) method for extracting second order statistical texture features of chest x-ray images. The weighted euclidean distance (WED) algorithm was used for feature matching. The final decision calculated by probability measure method for independent events, which is depending on "multiplication rule". The proposed system implemented via visual studio.net 2017; used for designing the main graphical user interface (GUI), MATLAB17; used for image processing diagnoses, and LabVIEW17; used for knowledge base diagnoses. The obtained results show that there is a good agreement between expert's diagnoses and proposed system diagnoses with a high accuracy.
References

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