CONTRAST FEATURES EXTRACTION FROM POSTERO - ANTERIOR CHEST RADIOGRAPHS USING TEXTURE ANALYSIS

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Abstract

Lung cancer is one of the most serious cancers in the world. Survival from lung cancer is directly related to its growth at its detection. The earlier the detection is, the higher the chances of successful treatment are. Chest X-ray image has been used for detecting lung cancer for a long time. The early detection and diagnosis of pulmonary nodules in chest X-ray image are among the most challenging clinical tasks performed by radiologists. Computer-aided diagnosis (CAD) has been proven to be a very effective approach as assistant to radiologists for improving diagnostic accuracy. Numerous systems were reported for detecting lung nodules on chest X-ray images. However, the strong concern of almost all of them is that the false positives per image are too large. How to reduce the number of false positives while maintaining a high true positive detection rate is the most important work in realizing a chest CAD system. Most of the proposed computer-aided diagnosis systems (CAD systems) adopt a two-step pattern recognition approach, which is a combination of a feature extraction process and a classification process using neural network classifier or statistical classifier. The performance of the classifier depends directly on the ability of characterization of candidate regions by the adopted features. These features have been categorized like 1) Geometric features and 2) Contrast features. Features like shape (circularity or roundness), area, diameter, perimeter, are said to be geometrical features and variance and uniformity comes under the category

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