Tongue Image Retrieval Based Using Machine Learning

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Abstract : In Traditional Chinese Medicine, tongue diagnosis is a vital inspection tool (TCM). In this study, we explore the potential of machine learning in tongue diagnosis. It begins with the cataloguing of the various classifications and characteristics of the human tongue. We infer 24 kinds of tongues from the material and coating of the tongue, and we identify 21 attributes of the tongue. The next step is to apply machine learning methods to the tongue dataset. We use the Weka machine learning platform to conduct the experiment for performance analysis. The 457 instances of the tongue dataset are used to test the performance of five different machine learning methods, including SVM, Random Forests, Decision Trees, and Naive Bayes. Based on accuracy and Area under the ROC Curve, the Support Vector Machine algorithm was shown to be the most effective for tongue diagnosis (AUC).

Keywords : medical imaging, image retrieval, machine learning, tongue
Conference Title : ICCAIP 2024 : International Conference on Computer Analysis of Images and Patterns
Conference Location : London, United Kingdom
Conference Dates : October 17-18, 2024