**ABSTRACT**

The analysis of the tongue is crucial approach in the evaluation of the human body in Ayurveda medicine. There is a substantial research scope for tongue diagnosis Ayurvedic therapy. The aim of the study is to apply advanced image processing and Machine learning techniques to ensure the feasibility and reliability of the tongue diagnosis in Ayurveda which has been attracting extensive attention due to its attribute and convenience to evaluate the patient’s health status.

The objective of our proposed work is to classify the tongue image into vata, pitta, kapha (tri-dosha) with the colour, coating, texture and shape features. These characteristics largely also would be determined by the portion of the tongue part (upper region, middle region and sides). Segmentation would be the first section which is of extreme importance which defines the region of interest (ROI) in the image. These features include various colour models and differentiated parts of tongue body. Coating and background also considered for feature set to feed them to the training-testing model for classification. The final outcome of the research is to blend in with the traditional Ayurvedic methods to the machine learning model in a way it describes the most basic class of inspection in medication.