

SOIL CLASSIFICATION & CROP SUGGESTION BASED ON HSV, GLCM, GABOR WAVELET TECHNIQUES AND DECISION TREE CLASSIFIER IN IMAGE PROCESSING

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This paper is intended to support agriculture by classifying 7 different types of soils like Clay, Clayey Peat, Clayey Sand, Humus Clay, Peat, Sandy Clay and Silty Sand, and in suggesting suitable crops that could be grown in those particular soils using image processing. Pre-processing is done by using Low Pass filter. HSV, GLCM, Gabor Wavelet algorithms are used for feature extraction. HSV, GLCM are used to perform colour based feature extraction. Gabor filters are used to perform texture based feature extraction. The features obtained from the test image are then compared with the features obtained from the images in the dataset. Matching of image features is achieved by training the Decision Tree classifier with statistical measurements like mean, standard deviation, skew and kurtosis. Finally the soil is predicted with the help of segmented images that are given as input for simulation using Matlab R2018a and is followed by crop suggestion.