

CONCLUSION

After a comprehensive literature survey of the technical research papers, in relation to the domains of Image Processing, Neural Networks, Machine Learning, Feature Extraction, the following conclusions are drawn.

Food grain analysis techniques are discussed on image processing using feature extraction and machine learning techniques. Advanced techniques like Principal Component Analysis (PCA) can be used to classify grains with high accuracy. Neural Networks are employed to classify grains with high accuracy. Internet of Things (IoT) can be involved to make the system more robust. Chalkiness in rice grains is taken as a primary feature to classify grains. Methods like Extended Maxima Operator can be used to increase accuracy of the system. Visual inspections of grains are replaced by computer vision techniques which increase the sturdiness and precision of the system. Backpropagation Neural Networks (BPNN) too can be employed for classification of rice grains. Classification based on reduced wavelet features outperforms conventional feature extraction techniques. Feature extraction based on color image and spectral analysis is used. Categorization of grains into three groups based on data fusion approaches KNN and minimum distance features are used to classify grains but do not yield high results. HSV, HIS and YCbCr color spaces can be used to enhance the results of the system. Probabilistic Neural Networks (PNN) are found to give high degrees of accuracy. Hence, it is a plausible option to employ probabilistic neural networks for the proposed system.

The literature survey has hence given a broad perspective into the core domains being implemented in our project and has enabled an in depth understanding of the concepts and methodologies that can be implemented.