

# A Review on Image Processing for Food Grading

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**Abstract:** - There are many techniques have been launched in Image Processing during recent years. Most of the techniques are developed for enhancing images obtained from military reconnaissance flights and spacecraft's. A reason behind the popularity of Image Processing systems is easy availability, large size memory devices, graphics software's etc. Image scanning, storing, enhancing and interpretation, these steps we need to pass in image processing. In this paper we study about the existing work of food grading system and make an objective to solve the problem.

**Keyword:** Image processing, pixel, noising, filtering, segmentation.

## I. INTRODUCTION

Satellites, conventional and digital cameras images are less in contrast and brightness because of the limitations of imaging sub systems and conditions during illumination of that images. There are many types of noise in images. In image enhancement, the goal is to accentuate features of certain image for subsequent analysis or for image display [1, 2]. Image enhancement is useful in feature extraction, image analysis and an image display. Inherent information for enhancement process itself does not increase in the data. The characteristics of emphasizes images is certain specified. The algorithm which is enhancement is fully interactive and application-dependent. There are some enhancement techniques:

- Contrast Stretching
- Noise Filtering
- Histogram modification

**Stretching the Contrast of image:** Many images like deserts, dense forests, snow, etc. are homogeneous i.e., levels of these images do not change. In terms of histogram representation, occurrence of very narrow peaks is characterized of these images. The homogeneity can also be due to the incorrect illumination of the scene.

This is not easily interpretable in images due to poor human perceptibility. Due to narrow range of gray-levels in the image having provision for wider range of gray-levels. Design of a method for contrast stretching is exclusively for frequently encountered situations. Many techniques have been developed to stretch the narrow range to the whole of the available in range of dynamic.

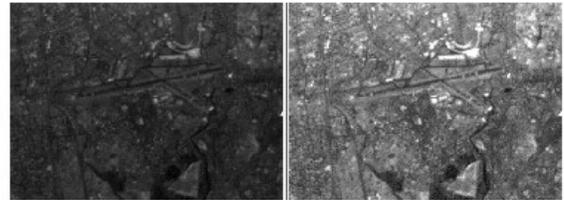


Figure 1 contrast stretching.

## II. LITRETURE SURVEY

Ashraf A. Aly, Safaai Bin Deris, Nazar Zaki The aim of this paper is to give a review of digital image segmentation techniques. Digital image has problems of segmentation represent great challenges for computer vision. The problems of computer vision may make good use of image segmentation. In this research they study and evaluate the different methods for segmentation techniques [3].

Dr. Mohammed Nasir Uddin, Dr. Jebunnahar and Md. Abul Bashar The main motive of this research is to learn beginner about some basic different types of image processing and to find out common image quality dependencies. They discussed all fundamental algorithms of image processing will be discussed and output define the dependency for quality of processed image [4].

Aman Chadha, Sushmit Mallik, Ravdeep Johar Texture, color, intensity and shape of the object inside an image are used to describe image. There are many feature-extraction techniques viz., Average RGB, Color Moments, Co-occurrence, Local Color Histogram. These techniques result in poor performance if work individual. Hybrid approaches of these techniques have also been evaluated and results for the good combined approach that have been presented and optimized for each class of image query. They propose an idea to enhance the image retrieval using Query modification idea through image cropping. User to refine and personalize the image retrieval results [5].

Gaurav Mandloi Many applications are claimed now days to extract the accurate information from the colored image database. Many types of images in data base having various different kinds of images and their own semantics, during extraction contents of image is based on various different kind of feature extraction techniques are available. Main focus of work on the various feature extraction techniques [6].

Vineet Rani in 2012, presents the study of different edge detection technique. Understanding images and extracting the information from them such that the information can be used for other tasks is an important task. One of the first steps in direction of understanding segmentation of image and then detect different objects in them. Thus image segmentation plays a vital role towards an image that represent the information. Edge detectors along with wavelets or other methods can be used in segmentation of an image using MATLAB [7].

Jyoti Patil in 2012, presents a paper in which process on images of retina with the help of Digital Image Processing tool. In which images are getting detected and then processed. We differentiate the error in of detecting edges in images as a fuzzy logic problem. The edge detection problem can be separated into three classes: filtering, detection, and tracing. Fuzzy separate the images based on characteristics of pixel which can control the degree of Gaussian smoothing [8].

Pushpajit A. Khaire in 2012, proposed a soft computing approach based on Fuzzy. The fuzzy approach converts the color image to a partially segmented image, an edge detector is convolved over the partially segmented image to obtain edged image. [9].

Bijuphukan bhagabati in 2012, propose a very simple but novel method for edge detection without determining threshold value. In this a fuzzy inference system in MATLAB is developed to get a simple fuzzy rule based edge detection technique. The results obtained by this method are compared with those of existing standard algorithms and found better results [10].

G.T. Shrivakshan in 2012, Proposed a paper in which fundamental concept of various filters and apply these filters in identifying a shark fish .It is implemented using MATLAB. The advantages and disadvantages of these filters are also considered in this study [11].

R.Yogamangalam in 2013, presents a brief outline on some of the most common segmentation techniques like model based, edge detection, thresholding, clustering, etc. and also explain about advantages as well as disadvantages. This paper presents that thresholding is the simplest and computationally fast method of segmentation [12].

### III. OBJECTIVE

The objectives of this work are given here under

- The main objective of work is to define a three stage model for wheat grain quality estimation.
- To apply mathematical morphology to extract the grain region under segmentation process.

- To apply the segmented featured analysis for structural evaluation of grain.
- To apply probabilistic neural network to identify the grain quality.
- To implement the work on real time images and estimates the accuracy.

### IV. CONCLUSION

Food grains are the farming product which requires the supervision to classify the quality. This quality estimation will help in audit system as well as to protect it from insect infection. But a false report or the wrong sample based observation can completely fails this analysis process. These situations occur because of lack of availability of such quality measure labs in near region. But this grain image processing methods provided the clear solution to identify the quality of the grain. In this paper, a wheat grain analysis method is defined to identify the quality of grain. The proposed work model is divided in three main stages. In first stage, the segmentation is applied to identify the grain region. In this stage, mathematical morphological operators with color model analysis are applied. The stage also subtracted the background region and generated the ROI.

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