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A KSCST PROJECT REPORT
On

**“Fruit Grading System for Quality Evaluation of Tomato in
Agriculture industry ”**

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2014-2015

Abstract

Agriculture sector plays a key role in economic development of India. The task of fruit grading is vital in agricultural industry because there is a great demand for high quality fruits in both local and foreign market. In this industry the efficiency and the proper grading is very important to increase productivity. However, fruit grading by human is inefficient, labor intensive and prone to error. Automated grading system not only speeds up the time of process but also minimizes error. Therefore there is a need for automated fruit grading method to be developed.

Every year India has a large production of tomatoes. There is a great demand for tomatoes in both local and foreign market. The tomato fruit is very delicate and hence careful handling of this fruit is required during grading. Hence this project aims to develop an efficient and effective fruit(tomato) grading method based on computer vision techniques.

There are several phases in the developed system. In the first step, image of the tomato is captured using a camera. Then the image is preprocessed to remove noise and to enhance the contrast. Next, the region of tomato is extracted using segmentation technique. Further, different features of the tomato like color, size and texture are extracted to represent the quality of fruit. Finally, based on the extracted features fruit(tomato) is classified as defective or non-defective and ripe or unripe using Neural network classifiers. This system will be very helpful to the agriculture industry in processing tomatoes.