Abstract

This paper presents a new date fruits sorting system using artificial neural networks (ANN). The classification system are based on attributes extracted from dates fruits obtained from a computer vision system (CVS) used. Two different models of neural networks have been applied as classifiers: multi-layer perceptron (MLP) with backpropagation and radial basis function RBF networks. The aims of this study are to define a set of external quality features from the shape and color for different types of date fruits and to examine the effectiveness of the neural network models for image classification. In the experiments for performance evaluation the neural networks achieved a recognition rate equal to 87.5% and 91.1% respectively for MLP with backpropagation and RBF, which is consistent with the best results reported in the literature for the same data base and testing paradigms.

References

- Buzera, M. , Groza V. , Prostean G. and Prostean O. 2008. techniques of analyzing the color or produces for automatic classification. 12th IEEE International Conference On Intelligent
- Noordam, J. C. et al. 2000. High speed potato grading and quality inspection based on a color vision system, AGENG.
- Ying Y. et al. 2003. Detecting Stem and Shape of Pears using Fourier Transformation and an Artificial Neural Network. Transaction of the ASAE. 46(1).

**Index Terms**

Computer Science  
Pattern Recognition

---

**Keywords**

Backpropagation Algorithm  
Classification  
Color  
Feature Extraction  
Lms Algorithm  
Machine Vision  
Multilayer Perceptrons (mlp) Neural Network  
Neural Networks
K-means Clustering
Radial Basis Function (rbf) Neural Network