Title: Mangopedia: A Mobile-based Application for Visual Recognition of Mango Plant's Diseases

Authors: John Anthony de Guzman, Arvin Pandili, Norland Dale Mendoza

ABSTRACT

One of the commonly used ways for detecting and recognizing crops diseases practiced by mostly small-time farmers is through the naked eye observation of the morphological features or symptoms manifesting the leaves. With that in hand, this study aimed to improve this manual detection process by developing an application which implements visual recognition by analyzing patterns of discoloration, blights, spots and lesions from leaves. An implementation of an image recognition approach which takes advantage of the morphological features or visual patterns from an acquired image to different template images was conducted. This approach conducts image preprocessing which involves sampling to optimize bitmap memory, dilatation and erosion to minimize image noise, and conversion to HSV format. Segmentation will also be conducted to obtain a binary image necessary for detecting and matching features. The template image with the highest number of matched features will be considered as the best possible result. Testing was done for compatibility, and performance and quality to ensure that the application produce accurate results. Eighty percent (80) accuracy was achieved and this was verified by the experts from the Department of Agriculture

Keywords: Mango Disease Diagnosis, Image Processing