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In collaboration with

University of Westminster

**A Coconut Maturity Detection System using Image Processing
(COCO-Detect)**

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Submitted in partial fulfilment of the requirements for the
BSc (Hons) Computer Science degree at the University of Westminster.

May 2023

ABSTRACT

Coconuts and its cultivation are very familiar to Sri Lankans as almost every Sri Lankan consume coconuts in every other day. This inspires Sri Lankans to use coconuts as a crop to cultivate and make an earning from it. Since Sri Lankan weather is optimal for this tropical crop Sri Lanka is one of the best well known countries to grow coconut trees. With these possibilities it is important to do harvesting properly and in a timely manner to get the maximum yield from a single coconut tree. To harvest the crop cultivators must have good experience in coconut maturity to understand at what stage is the best time to harvest the crop as it opposes a tricky situation. Only well experienced eyes will tell what bunch is matured from the rest. Otherwise, resulting in harvesting young coconuts which are not mature enough or coconut to fall from the tree after being overmatured. Coconuts are also known as coccus nucifera which is the one of the three main export crops in Sri Lanka.

This study gathers around in developing a system to detect and identify whether the bunch is matured bunch or an immature bunch from the image supplied by the end user using image processing techniques, so it prevents involvement of a domain expert for this process. This research commenced with a goal of developing a convolutional neural network to extract the features from the coconut and aid in the process.

Keywords – Coconut Maturity Detection, Convolutional Neural Networks, Image Processing, Data Science, Coconut color