

**UNIVERSITI TEKNOLOGI MARA**

**AUTOMATED INSPECTION SYSTEM FOR  
SHAPE OF STARFRUIT**

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## **ABSTRACT**

Nowadays there are many inspection systems that can recognize tropical fruit in Malaysia. However, finally, they have to use shape analysis for identification and to obtain exact boundary positions and distinguish fruit areas in a natural background image by colour, this research aims to detect a new method or system of Starfruit which enables people to recognize, verify and without the constraints of human energy and time. The system will be introduced is starfruit inspection vision system (SIVS), and purposely created for MARDI. The objectives of this project are to define the requirement criteria in order to develop Automated Inspection System for shape of starfruit, to design Automated Inspection System model that covers the shape of starfruit 4, 5 and 6 based on the shape follow MARDI quality standards and its also to develop a prototype system for automated shape system of starfruit using lab view and IMAQ vision 6.0 software. The concept of this research system is based on Fourier-based shapes separations method was developed for shape detection, the use of classifier such as linear discrimination analysis. The objectives has been achieved and found the boundary shape of each starfruit and the results come out with the standard shape of starfruit. The prototype is capable to shows each shape of starfruit and 100% accuracy of each shape with the fastest process identify shape of starfruit.