

IMPLEMENTATION OF OPTICAL CHARACTER RECOGNITION TECHNOLOGY IN A NUTRITION SCANNING APPLICATION FOR FOOD PACKAGING LABELS

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Abstract

Many consumers rarely read nutrition labels on food packaging due to difficulty understanding the information. This research develops a mobile application that can scan nutrition labels using OCR (Optical Character Recognition) technology to address this issue. The application was developed using Flutter and RAD methodology. Its main features include nutrition label scanning, health monitoring, and alerts when consumed nutrients exceed recommended limits based on age and health conditions. From testing results, OCR accuracy reached 74% for text detection and 72% for nutritional value identification. The highest accuracy of 90% was achieved under bright lighting conditions with flat labels. However, accuracy dropped dramatically to 47% with curved labels or poor lighting. Other features such as login, user profile, health monitoring, and scanning history all function properly. The developed application is expected to help consumers more easily read and understand nutritional information on food labels. Future development requires enhanced OCR algorithms to detect text more accurately under various lighting conditions and image capture angles.

Keyword: Food Packaging, Label Nutrition, Nutritional Scanning Application, Optical Character Recognition, Scanning Technology