PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

FERHAT ABBAS UNIVERSITY OF SETIF

Faculty of Sciences

Department of Computer Science

Dissertation submitted in partial fulfilment of the requirements for the degree of Master in Cybersecurity

Theme

Aklee, AI-Based Mobile App for Nutrition Label Classification

Presented by:

Bourouba Mohamed El Khalil

Supervisor:

Pr. Toumi Lyazid

June 2025

Contents

Abstract

With the growing interest in healthy eating and digital solutions, the need for accessible tools that assist users in evaluating food products has increased. In this work, we introduce Aklee, a mobile application that leverages artificial intelligence and optical character recognition (OCR) to classify food products based on their nutritional labels. Our system uses Tesseract OCR to extract text from scanned product images and applies a Catboost classifier to determine the nutritional quality. The application is built with a modern architecture using React Native for the mobile frontend, Laravel and FastAPI for backend services, and containerized using Docker.

The goal is to provide a user-friendly and efficient tool that aids consumers in making healthier food choices through real-time analysis.

Keywords: Nutrition Label, Classification, OCR, CatBoost, Mobile Application, React Native, FastAPI, Docker.