

**KLASIFIKASI BIJI KOPI JENIS ROBUSTA DAN ARABIKA
MENGUNAKAN METODE *CONVOLUTIONAL NEURAL NETWORK*
(CNN) DENGAN *MOBILENETV2* *Classification of Robusta and Arabica
Coffee Beans Using Convolutional Neural Network (CNN) Method with
MobileNetV2***

Qonitatul Hasanah, S.ST., M.Tr.T. *as Academic Supervisor*

Johan Indra Maulana

*Study Program Informatics Engineering
Majoring of Information Technology*

ABSTRACT

Indonesia, as an agrarian country, has coffee as one of its leading commodities, with two main types: Robusta and Arabica. Differences in the characteristics of these coffee types, along with variations in roasting levels (light, medium, and dark), often create challenges in visual identification, which is still performed manually. This study aims to implement and evaluate a Convolutional Neural Network (CNN) method using the MobileNetV2 model on a mobile-based system to classify Robusta and Arabica coffee beans at different roasting levels through visual images. The dataset consists of 2,100 images divided into six classes. The system is implemented in an Android-based application to facilitate real-time classification. The results show that the model achieves a test accuracy of 89.76%, with precision, recall, and F1-score values above 78% across all classes. In addition, the System Usability Scale (SUS) evaluation yields a score of 81.69, which is categorized as acceptable with grade A. These results indicate that the CNN-MobileNetV2 method is effective for coffee bean classification, although limitations related to lighting conditions in the dataset remain.

Key words: *Convolutional Neural Network (CNN), MobileNetV2, Coffee Bean Classification, Roasting Level.*