

## ABSTRACT

Technology continues to be developed by researchers from all over the world. Content-Based Image Retrieval (CBIR) is one of the technologies that continue to be developed. CBIR is a technology that can retrieve image collections that similar based on query image input.

In this final project, the CBIR system that combined with Augmented Reality (AR) technology and uses You Only Look Once (YOLO) method as an object detection algorithm will be made. Previously, image retrieval can be done by text input or we can call it Text-Based Image Retrieval. However, image retrieval by text can not be done if the object's name or definition in the image is unknown. Image retrieval can be done in real-time using video input with the combined performance of CBIR, AR, and YOLO.

This research implements CBIR with the YOLO method with the results of system performance that work optimally. Performance parameters consist of recall, precision, and F1 score. The output obtained in this research is the system working with the result of the highest average value for a recall is 97.1%, for precision is 89%, and for F1 score is 92% with a dataset containing five Indonesian national foods.

**Keyword:** *Content-Based Image Retrieval, Augmented Reality, YOLO, Image Retrieval, Indonesian National Food.*