

Informatics Institute of Technology
In Collaboration With
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University of Westminster, Coat of Arms

“Mealometer”

**Food Recognition and Diet Tracking Through an AI Based Image
Processing Model**

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ABSTRACT

This research aims to develop an efficient and accurate food recognition and dietary assessment system that leverages artificial intelligence and image processing techniques. The increasing demand for dietary management and the importance of proper nutrition has made it imperative to design a system that can automatically recognize and assess food items consumed by individuals. Current manual methods of food tracking are time-consuming and prone to human error, making it necessary to tackle these difficulties.

The solution proposed in this research is to design a system that can automatically recognize food items from images, estimate their volume, and provide a comprehensive dietary assessment report. To achieve this, various AI and image processing techniques such as deep learning and machine learning algorithms have been explored and evaluated. The system will be designed to be user-friendly and accessible to all so that anyone can use it to track their dietary intake.

The result of this research will be a robust system that can accurately track and assess an individual's dietary intake and support their nutritional needs, enabling them to have the necessary knowledge to make knowledgeable choices regarding their nutrition and general well-being. The ultimate goal is to provide a valuable tool that can improve the health and well-being of individuals through proper dietary management.

Keywords: computer vision, neural networks, image classification, volume estimation.

Subject Descriptors: food recognition, dietary assessment, AI, image processing, deep learning, machine learning, dietary management, nutrition.