ABSTRACT

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WEB BASED PLANT CLASSIFICATION APPLICATION USING CNN & YOLOv5 METHODS.
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Key Words: Plant classification, Website, CNN, YOLOv5, Artificial Intelligence.

(xiv +64+Attachment)

In everyday life, humans often see plants with diverse characteristics around them. But at this time there are still many people who have not been able to distinguish the type of plant this is because there are several plants that have the same characteristics and limited human ability to distinguish the type of plant. The way humans determine the type of plant still uses a lot of manual methods. Human visual ability for object detection makes humans have the ability to recognize objects based on their characteristics. While the machine's ability to detect an object has a different process and performance from humans when the machine recognizes an object. Based on this, a method is needed that can ensure uniformity in the detection of plant species. The purpose of this research is plant detection using You Only Look Once (YOLO) object recognition method. plant classification using Convolutional Neural Networks (CNN) method approach & plant classification website implementation with Python and Bootstrap Framework. This application has been successfully tested using the Black Box method, with the Requeirement Testing method. The data training process was carried out using the YOLOv5 method with 300 epochs resulting in a current average loss of 0.0008253. The results of the entire dataset that has been trained have a precision of 0.829, recall of 0.673 with a mean Avergae Precision with JoU threshold 0.5 of 0.739 and mean Average Precision with JoU threshold gradually from 0.5 to 0.95 has an average of 0.475.

Bibliography (2019 - 2023)