

**A Project Report on**

# **“Medicinal Plant Detection Using Machine Learning”**

Submitted in partial fulfillment of award of

**BACHELOR OF TECHNOLOGY**

degree

in

**Computer Science and Engineering  
(Spec. in AI&ML)**

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## DECLARATION

We hereby declare that the project work presented in this report entitled “**Medicinal Plant Detection Using Machine Learning**” , in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science & Engineering (**Spec. in AI&ML**) submitted to A.P.J. Abdul Kamal Technical University, Lucknow, is based on my own work carried out at the Department of Computer Science & Engineering, Moradabad Institute of Technology, Moradabad. The work contained in the report is original and project work reported in this report has not been submitted by us for the award of any other degree or diploma.

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## **ABSTRACT**

The recognition and preservation of medicinal plants are crucial for healthcare and biodiversity conservation. Traditional identification methods are labor-intensive and require specialized expertise, making them impractical for large-scale use. This project leverages machine learning, specifically the YOLOv8 (You Only Look Once, version 8) algorithm, to automate the detection and classification of medicinal plants from images.

A diverse dataset from Roboflow, including annotated images and rich metadata such as geographical location and growth stage, is used to train the model. The primary goal is to develop a reliable model that can accurately identify and classify medicinal plants, facilitating rapid and precise plant identification.

The project includes hardware and software components, such as high-performance computing systems with GPU support, the Python programming language, machine learning frameworks like TensorFlow, and annotation tools. The trained YOLOv8 model aims to benefit researchers, conservationists, and healthcare practitioners by automating the identification process, thereby enhancing research efficiency, supporting conservation efforts, and aiding in the discovery of therapeutic compounds.

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# TABLE OF CONTENTS

<b>Chapter 1 INTRODUCTION.....</b>	<b>8</b>
1.1 Background .....	8
1.2 Problem Statement.....	8
1.3 Objectives.....	8
1.4 Scope.....	8
 <b>Chapter 2 SYSTEM COMPONENT.....</b>	 <b>9</b>
2.1 Hardware Requirements .....	9
2.1.1 Software Requirements.....	9
2.2 Datasets.....	9
 <b>Chapter 3 WORKING PRINCIPLE .....</b>	 <b>10-11</b>
3.1 Machine Learning Overview.....	10
3.2 YOLOv8 Algorithm.....	10
3.3 Data Annotation.....	11
3.4 Model Training.....	11
 <b>Chapter 4 IMPLEMENTATION.....</b>	 <b>12</b>
4.1 Source Code.....	12
4.2 Data Collection.....	12
4.3 Data Processing.....	12
4.4 Model Training.....	12
 <b>Chapter 5 RESULT AND EVALUATION.....</b>	 <b>13-15</b>
5.1 Performance Metrics.....	13

5.1.1 Precision.....	13
5.1.2 Recall.....	13
5.2 Model Accuracy.....	13
5.3 Comparative Analysis.....	13
<b>Chapter 6 CONCLUSION.....</b>	<b>16</b>
6.1 Summary.....	16
6.2 Future Work .....	16
6.2.1 Dataset Expansion.....	16
6.2.2 Model Enhancement.....	16
6.3 Implications.....	16

## LIST OF FIGURES

Fig. 3.1:Working Principle.....	
Fig. 5.1: Result and Evaluation.....	
Fig. 5.2: Result and Evaluation.....	
Fig. 5.3: Result and Evaluation.....	
Fig. 5.4: Result and Evaluation.....	
Fig. 5.5: Result and Evaluation.....	
Fig. 5.6: Result and Evaluation.....	