**WEED DETECTION**

A Project Report

Submitted in the partial fulfilment on the requirements for

the award of the degree of

Bachelor of technology

In

Department of Computer Science And Engineering

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**DECLARATION**

The Project Report entitled “WEED DEECTION” is a record of bonafide work of <L.VAMSIKRISHNA(2010030410) T.SAINATH(2010030174) V.ABHIRAM(2010030383)>, submitted in partial fulfilment for the award of B. Tech in the Department of Computer Science and Engineering to the K L University, Hyderabad. The results embodied in this report have not been copied from any other Departments/University/Institute

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## CERTIFICATE

This is to certify that the Project Report entitled “WEED DETECTION” is being submitted by V.ABHIRAM(2010030383) T.SAINATH(2010030174) L.VAMSI KRISHNA(2010030410) submitted in partial fulfillment for the award of B. Tech in CORONA HACK CHEST X-RAY to the K L University, Hyderabad is a record of bonafide work carried out under our guidance and supervision.

## Signature of the Supervisor

## 

Dr. Anal Paul

**Signature of the HOD Signature of the External Examiner**

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**ABSTRACT**

Weeds are one of the most important factors affecting agricultural production. The waste and pollution of farmland ecological environment caused by full-coverage chemical herbicide spraying are becoming increasingly evident. With the continuous improvement in the agricultural production level, accurately distinguishing crops from weeds and achieving precise spraying only for weeds are important. However, precise spraying depends on accurately identifying and locating weeds and crops. In recent years, some scholars have used various computer vision methods to achieve this purpose. This review elaborates the two aspects of using traditional image-processing methods and deep learning-based methods to solve weed detection problems. It provides an overview of various methods for weed detection in recent years, analyses the advantages and disadvantages of existing methods, and introduces several related plant leaves, weed datasets, and weeding machinery. Lastly, the problems and difficulties of the existing weed detection methods are analysed, and the development trend of future research is prospected.

**TABLE OF CONTENTS**

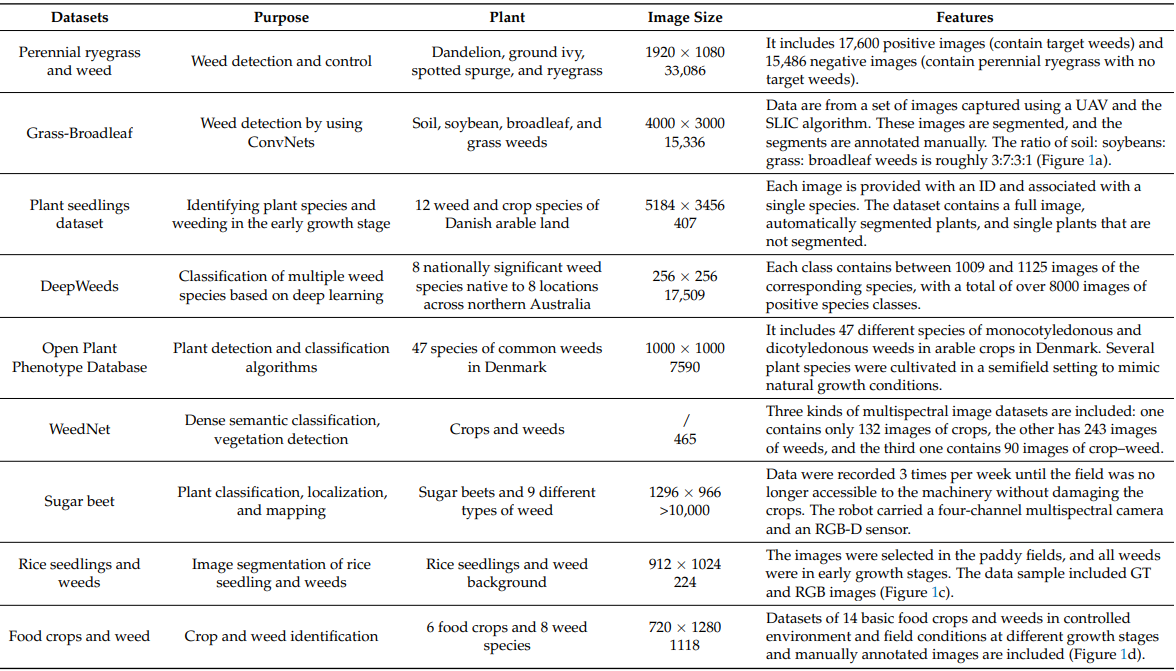
* 1. Introduction
  2. Literature Survey
  3. Hardware & Software requirements
  4. Methodology
  5. Flowchart
  6. Implementation
  7. Results Discussion
  8. Conclusion and Future Work
  9. References

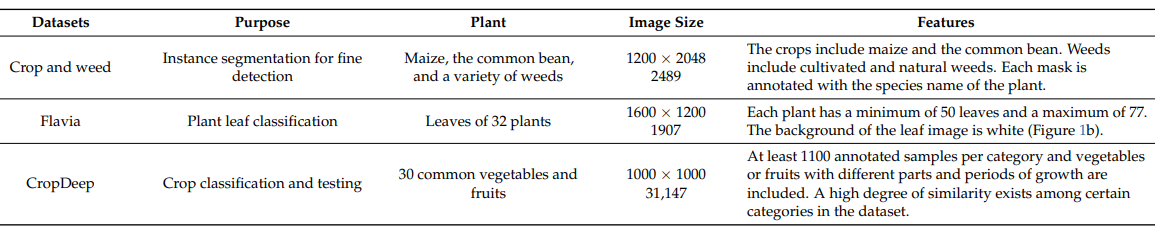
**INTRODUCTION**

Weeds are an all too common occurrence in lawns and gardens. While some may be deemed useful or attractive, most types of weeds are considered a nuisance. Learning more about weed control and detection can make it easier for gardeners to decide whether these weeds should be welcomed or if they must go. Let’s take a look at some common weed plants and when or what weed control methods may be necessary. By definition, a weed is known as “a plant in the wrong place.” For the most part, these plants are known more for their undesirable qualities rather than for their good ones, should there be any. Weeds are competitive, fighting your garden plants or lawn grass for water, light, nutrients and space. Most are quick growers and will take over many of the areas in which you find them. While most types of weeds thrive in favourable conditions, native types may be found growing nearly anywhere the ground has been disturbed. In fact, they may even offer clues to your current soil conditions.

One of the newest and most researched technologies nowadays is deep learning. Deep learning is a technique used to create intelligent systems as similar as possible to human brains. It has made a big impact in all types of domains such as video, audio and image processing. On the other hand, agriculture is humanity’s oldest and most essential activity for survival. The growth of population during the last years has led to a higher demand of agricultural products. To meet this demand without draining the environmental resources the agriculture uses, automation is being introduced into this field. The present project aims to merge both concepts by achieving autonomous weed recognition in agriculture this goal will be reached by using new technologies such as Open CV, Farm Bot and Python programming, image processing, deep learning and Artificial Neural Networks (ANNs).

**LITERATURE SURVEY**





**IMPLEMENTATION**

**Setting up GPU :**

**Step-1 :** Clone darknet repo

**Step-2 :** Change makefile to have GPU and OPENCV enabled

**Step-3 :** Verify CUDA

**Step-4 :** Make darknet (build)

**Step-5 :** Define helper functions

**Step-6 :** Use this to upload files

**Step-7 :** Use this to download a file

**Mounting google drive for data**

**Step-8 :** Mounting google drive

**Step-9 :** This creates a symbolic link so that now the path /content/gdrive/My\ Drive/ is equal to /mydrive

**Step-10 :** From github copy all file from crop\_weed\_detection\_training folder and make Agriculture (same name requires) folder and paste.

**CONCLUSION AND FUTURE WORK**

Further research on semi- or unsupervised feature learning will be a hotspot of weed detection in the future. Researchers have obtained good results in diverse specific background, but they still lack generality and robustness. Deep learning-based methods show an encouraging promise, but the large number of labeled samples increases the manual requirements. The verification and comparison of new development algorithms also require sufficient sample size and corresponding ground truth datasets. Compared with various weeds, field crop images are relatively easy to obtain. In view of the above reasons, weed detection methods based on semi- or unsupervised feature learning will continue to be a popular research topic in the future. With the use of the technology of weed detection and accumulation to develop an automatic crop guidance system, agricultural operations can be carried out in various aspects, such as harvest, weeding, spraying, and transportation. Automatically guided agricultural vehicles do not fatigue and reduce the labor intensity of the operator, thus improving efficiency and safety. However, at present, few methods

and devices meet the high requirements of practical applications. Considerable work should be done to develop equipment with high performance and cost efficiency. Although the detection was good enough but still there exist a room for the improvement in the result. Convolution Neural Network (CNN) can be applied in the future research for better result. In stage when the weed and Soya colour are same convolution network (CNN) can be produced much better result. The limitation in the above proposed research that was faced was sunlight light intensity issue because of the variation in the captured image was quite high. This can be overcome when the similar research was done in a very controlled environment. Better camera can be used in order to capture much better image with different sensor in order to overcome the problem that arise due to sunlight variation and shadows.

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