

AI DRIVEN AGRIBOT

An Agricultural Robot Plantation and AI Driven Quality Insights

Introduction:

Agriculture plays a critical role in the economy, particularly in regions where rice is a staple crop. Traditional rice planting methods are labor-intensive and time-consuming, often leading to inefficiencies and increased costs. To address these challenges, the "AI Driven Agribot" project aims to develop an innovative solution that automates the rice planting and quality analysis process.

The introduction of this system aims to revolutionize rice farming by reducing dependency on manual labor, increasing planting accuracy, and enhancing overall productivity. This project represents a significant step towards modernizing agriculture and ensuring food security through technological innovation.

Problem Identification:

Inconsistent Quality Control:

- Issue:** Danger to the farmers life due to the hazardous insects and snakes.
- Impact:** This can cause issues such as not sufficient labour for the work into the fields.

Insufficient Labor Power:

- Issue:** Due to high labour requirement and uncomfortable conditions for farmer due to rice planting field.
- Impact:** Highly paid labour, cost effective on the overall rice farming.

Snakes in Rice fields and bushes :

- Issue:** Danger to the farmers life due to the hazardous insects and snakes.
- Impact:** This can cause issues such as not sufficient labour for the work into the fields.

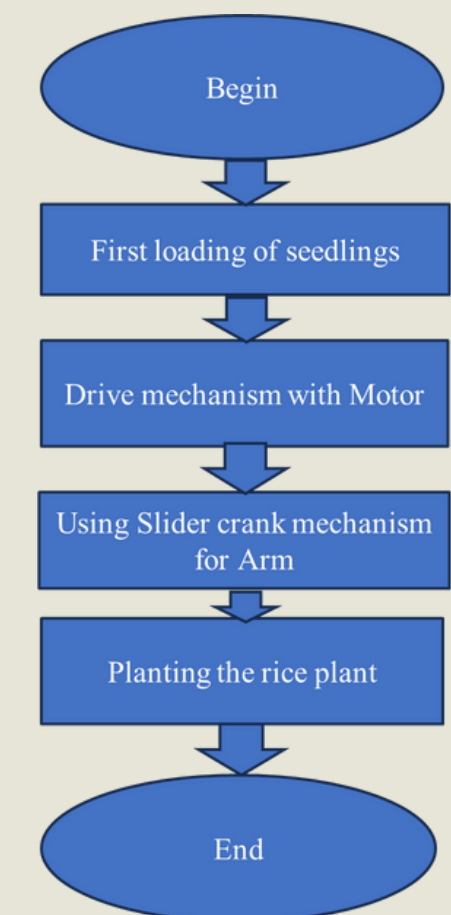
Objectives:

- Implement Rice plantation Agribot to Reduce labour costs and manual errors.
- Achieve a improvement in rice quality through AI-driven crop quality control measures.
- Identify potential issues after specific period from the day plantation to spray the fertilizers before the crucial impact on the crop.

Methodology

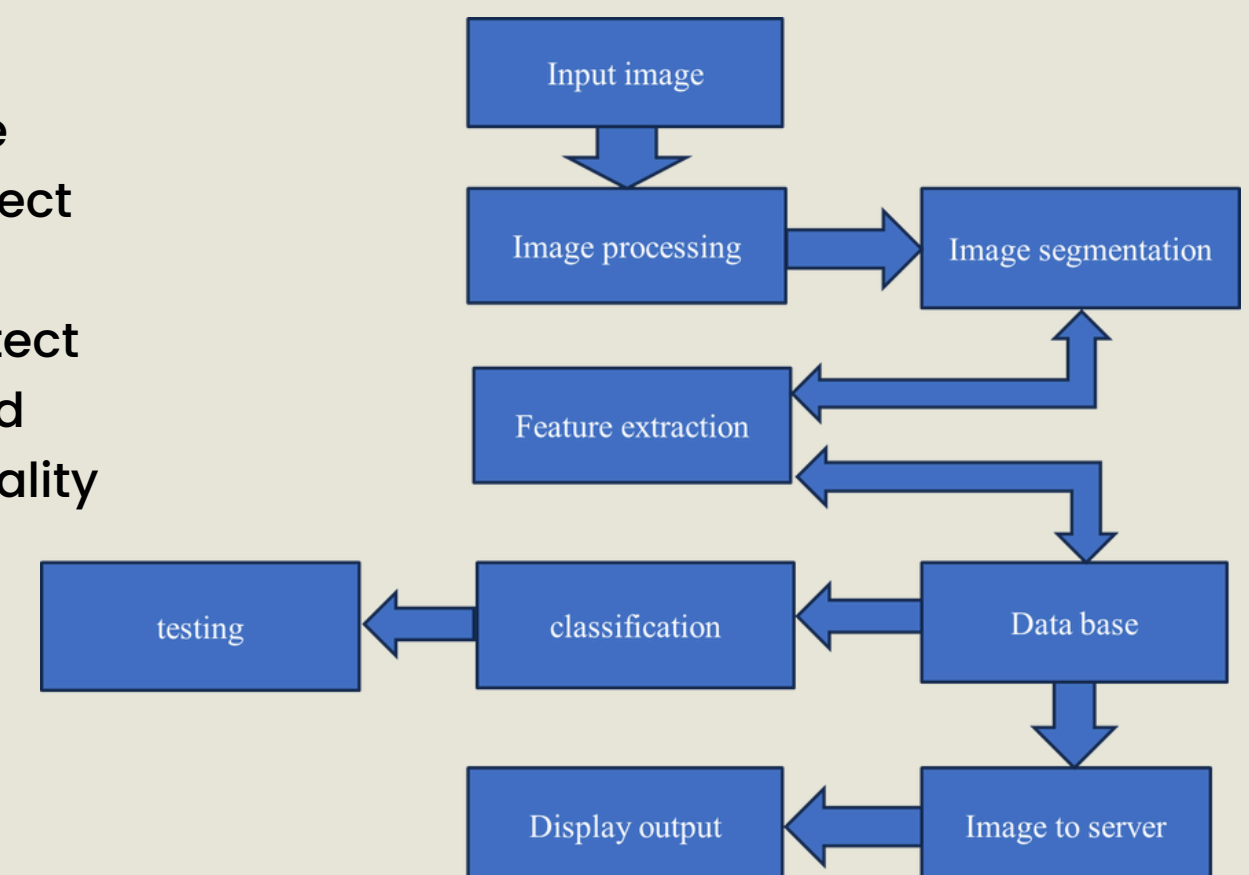
Hardware Architecture:

Here is the architecture of the hardware which the rice planter will work and the different actions will be taken by the machine.



Software Architecture:

Here is the block diagram of the software with which we can detect the quality of the rice plant. The Machine Learning is used to detect the difference between the good quality product and the bad quality product.



Innovativeness:

- 1) Making the rice planting project automated by Integrating Artificial Intelligence.
- 2) Detecting the precise rice quality by Image Processing
- 3) This mechanism is plant rice seedlings accurately without any human intervention.

Expected Outcomes:

- 1)Achieve an improvement in rice quality.
- 2) Decrease the overall cost and improve profitability by high salary to the labor by the farmers.