Component list:

1. Microcontroller: raspberry Pi, esp32 with cam, stm32 with cam

Main file: AI Driven Agribot.

1. Size of the chassis: 20 cm
2. Size of rice seedling: 10 cm

Reference video:

1. ESP32 camera: <https://www.youtube.com/watch?v=ha3BiOmKqDw>
2. Code of leaf disease detection: <https://www.youtube.com/watch?v=amt9ZmGofJk&t=331s>
3. Project website link: <https://how2electronics.com/esp32-cam-based-object-detection-identification-with-opencv/>
4. Project git hub link: <https://github.com/mehra-deepak/Plant-Disease-Detection>
5. Esp32 camera basic: <https://www.youtube.com/watch?v=visj0KE5VtY>
6. Raspberry pi camera link: <https://www.google.com/search?sca_esv=1fc0c3fc9b748aaf&sca_upv=1&rlz=1C1CHBD_enIN1121IN1121&tbm=shop&sxsrf=ADLYWIKpYS0mXjWnosReANMgWV0bXn2rzg:1724753469538&q=raspberry+pi+camera+16mp&spell=1&sa=X&ved=0ahUKEwj-n4Gv95SIAxV37TgGHYqSMLoQBQiRBygA&biw=1707&bih=772&dpr=1.13>

11. \*\*Smart Energy Meter\*\*:

- Develop an energy meter that monitors electricity consumption in real-time and provides usage data via a mobile app. Include features like cost estimation and usage patterns to help users manage their energy consumption.

21. \*\*Smart Bicycle System\*\*:

- Develop a smart system for bicycles that includes GPS tracking, theft detection, and ride data logging. The system can also include features like automatic lighting and turn signals.

25. \*\*Wireless Sensor Network for Agriculture\*\*:

- Develop a network of wireless sensors to monitor various agricultural parameters like soil moisture, temperature, and crop health. The data can be used to optimize farming practices and improve yield.

**Automated Greenhouse System**:

* Develop a system to automate the monitoring and control of greenhouse conditions. Use sensors for temperature, humidity, and soil moisture, and actuators for ventilation, heating, and irrigation.

**RFID-Based Access Control System**:

* Develop an access control system using RFID technology. Users can gain entry to a secured area by scanning their RFID cards or tags. The system can log entries and provide data analytics for security purposes.

**High-Fidelity Audio Amplifier**:

* Design and build a high-fidelity audio amplifier for audiophiles. Focus on achieving low distortion and high signal-to-noise ratio.

**How to Use an ESP32 & Camera to Know You've Got Mail**:

* <https://www.youtube.com/watch?v=P5HG-2MulWk&t=0s>

**Universal Remote: Try these 16 Brilliant ESP32 projects!!!**

* <https://www.youtube.com/watch?v=1nkgTtTWnPM>

**Agricultural Rice Plantation Robot using AI & IOT**

**Links:**

* 1. [**https://www.jetir.org/papers/JETIR2108073.pdf**](https://www.jetir.org/papers/JETIR2108073.pdf)
  2. [**https://www.sciencedirect.com/science/article/pii/S1474667015349740**](https://www.sciencedirect.com/science/article/pii/S1474667015349740)
  3. [**https://www.researchgate.net/publication/350584557\_Design\_and\_fabrication\_of\_an\_agricultural\_robot\_for\_crop\_seeding**](https://www.researchgate.net/publication/350584557_Design_and_fabrication_of_an_agricultural_robot_for_crop_seeding)
  4. [**https://www.mdpi.com/2073-4395/13/2/380**](https://www.mdpi.com/2073-4395/13/2/380)
  5. [**https://www.fujipress.jp/main/wp-content/themes/Fujipress/pdf\_subscribed.php**](https://www.fujipress.jp/main/wp-content/themes/Fujipress/pdf_subscribed.php)
  6. [**https://acadpubl.eu/hub/2018-120-6/9/880.pdf**](https://acadpubl.eu/hub/2018-120-6/9/880.pdf)

**Need:**

* + 1. [**https://www.researchgate.net/publication/241167207\_A\_rice\_transplanting\_robot\_contributing\_to\_credible\_food\_safety\_system**](https://www.researchgate.net/publication/241167207_A_rice_transplanting_robot_contributing_to_credible_food_safety_system)