

# PRECISION AGRICULTURE



# ABSTRACT

**Farmers consistently struggle to maintain balanced ratios of NPK. Achieving sustainable and effective farming practices is severely hampered by this imbalance. Such imbalances not only waste resources and pollute the environment through overfertilization, but they also impede crop growth and lower yields due to nutrient deficiencies brought on by under-fertilization. To promote agricultural productivity and sustainability, this issue must be resolved.**



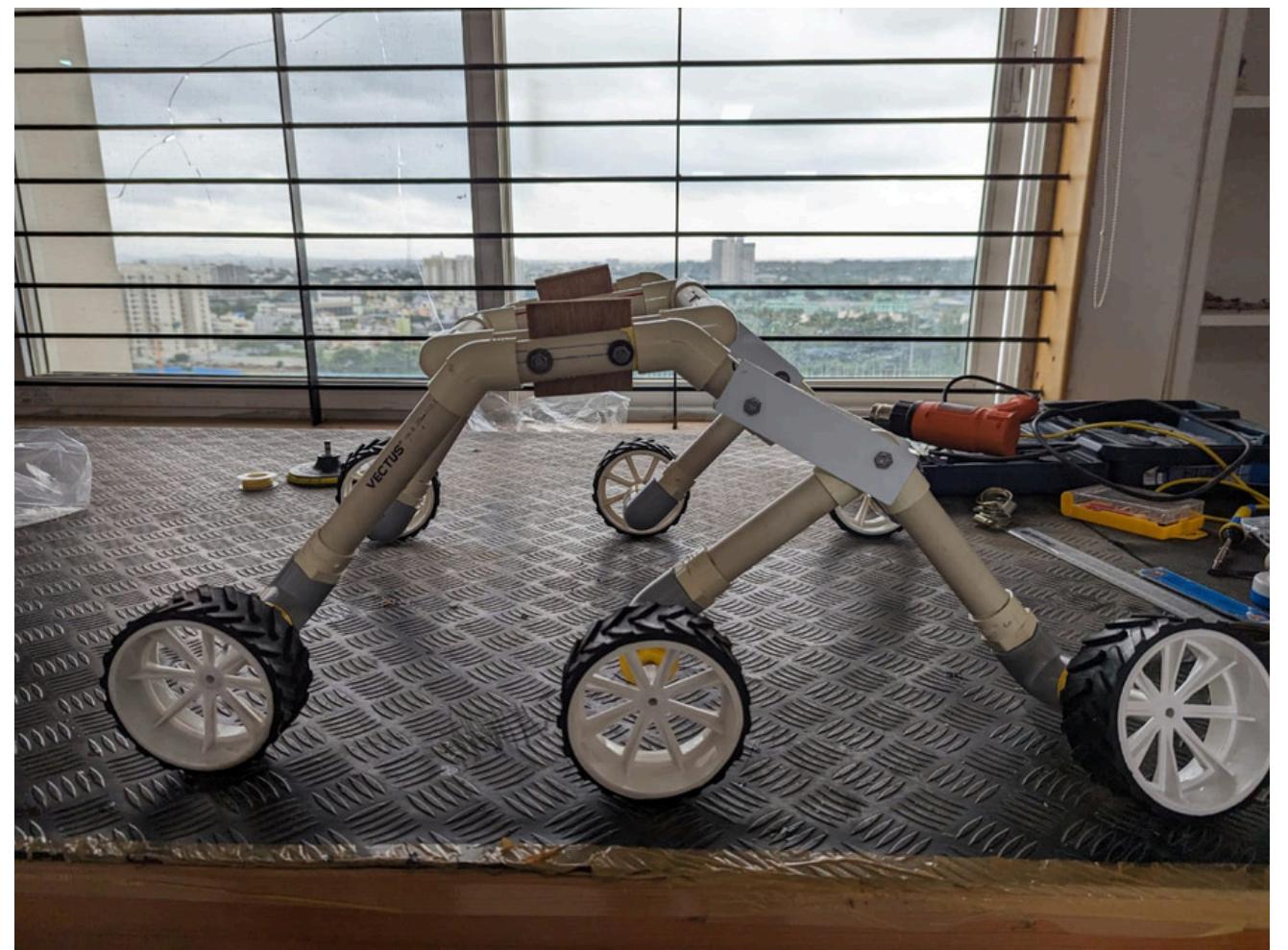


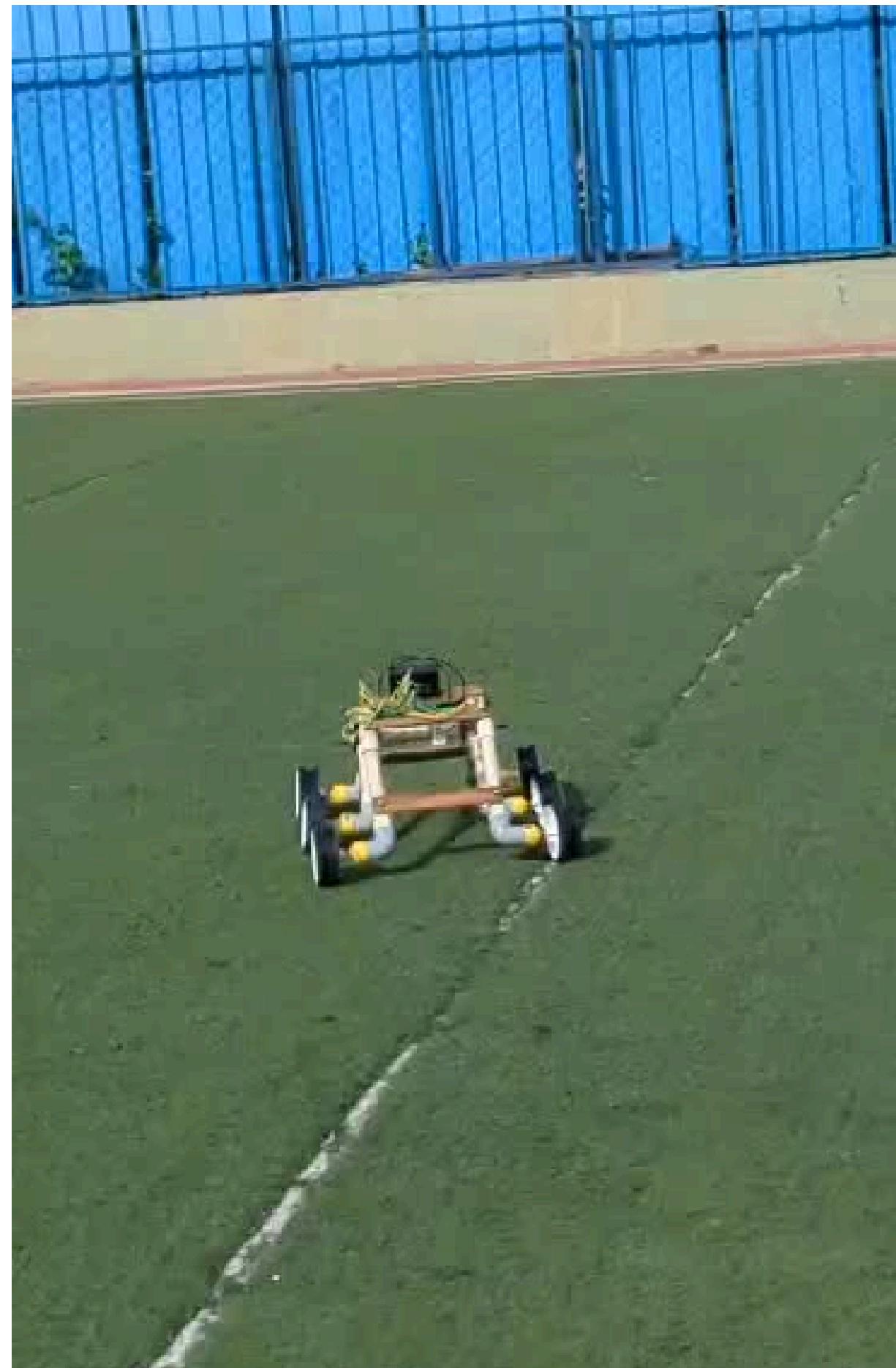
# INTRODUCTION

**Our model is an innovative method that aims to enhance productivity and maximize resource efficiency by maintaining adequate ratio of NPK in the soil.**

**The rover is automated with an object detecting system that uses NPK sensors to determine the amounts of N, P, and K in the soil, boosting its effectiveness.**

# RESULTS





# OBJECT RECOGNITION MODEL

bhargav p / esp32c...

bottle (0.85)

Inferencing...

Time per inference: 1 ms.

Switch to data collection mode

getRepository This client is open source.

bhargav p / esp32c...

bottle (0.89)

Inferencing...

Time per inference: 2 ms.

Switch to data collection mode

getRepository This client is open source.

bhargav p / esp32c...

bottle (0.55)

Inferencing...

Time per inference: 5 ms.

Switch to data collection mode

getRepository This client is open source.



# FUTURE ENHANCEMENTS

- 1. Implementing protruding mechanism for NPK testing in the soil**
- 2. Building the fertility map from the obtained values**
- 3. Developing a model to acquire the NPK values from the already obtained fertility maps.**

# CONCLUSION



**In conclusion, farmers' struggle to maintain balanced NPK ratios in agricultural soils hampers sustainable farming. Excessive or inadequate fertilizer use wastes resources, pollutes the environment, and impairs crop growth. The innovative rover with NPK sensors offers a promising solution to enhance productivity and resource efficiency, promoting agricultural sustainability.**



**THANK  
YOU**