OBSTACLE AVOIDANCE FOR GROUND ROBOT (PROGRESS)

ESW PROJECT Group 9
Team 25

AGENDA

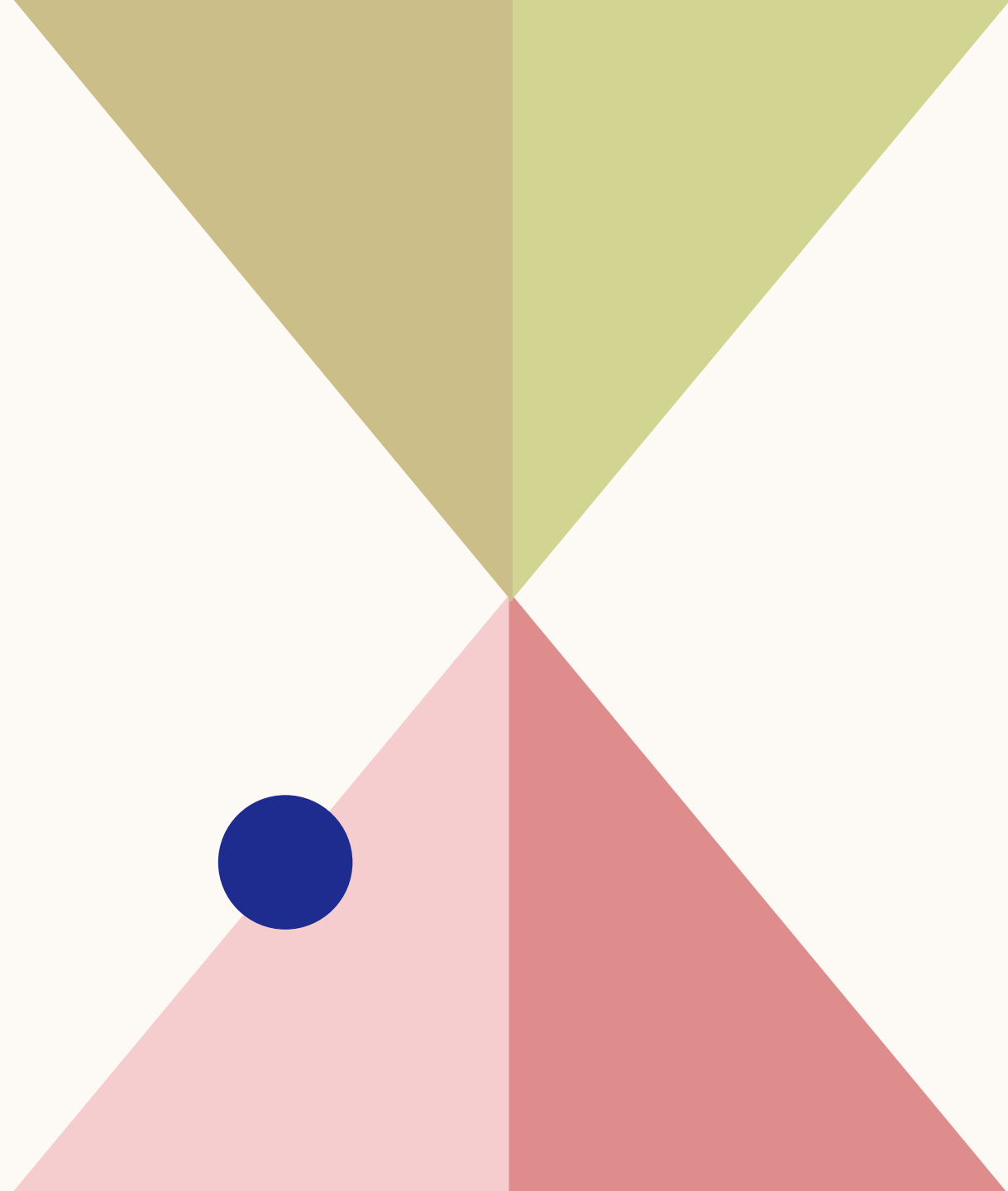
Team Members

Progress

Primary Goals

Timeline

Areas of Focus



INTRODUCING OUR TEAM: GIGAHERTZ

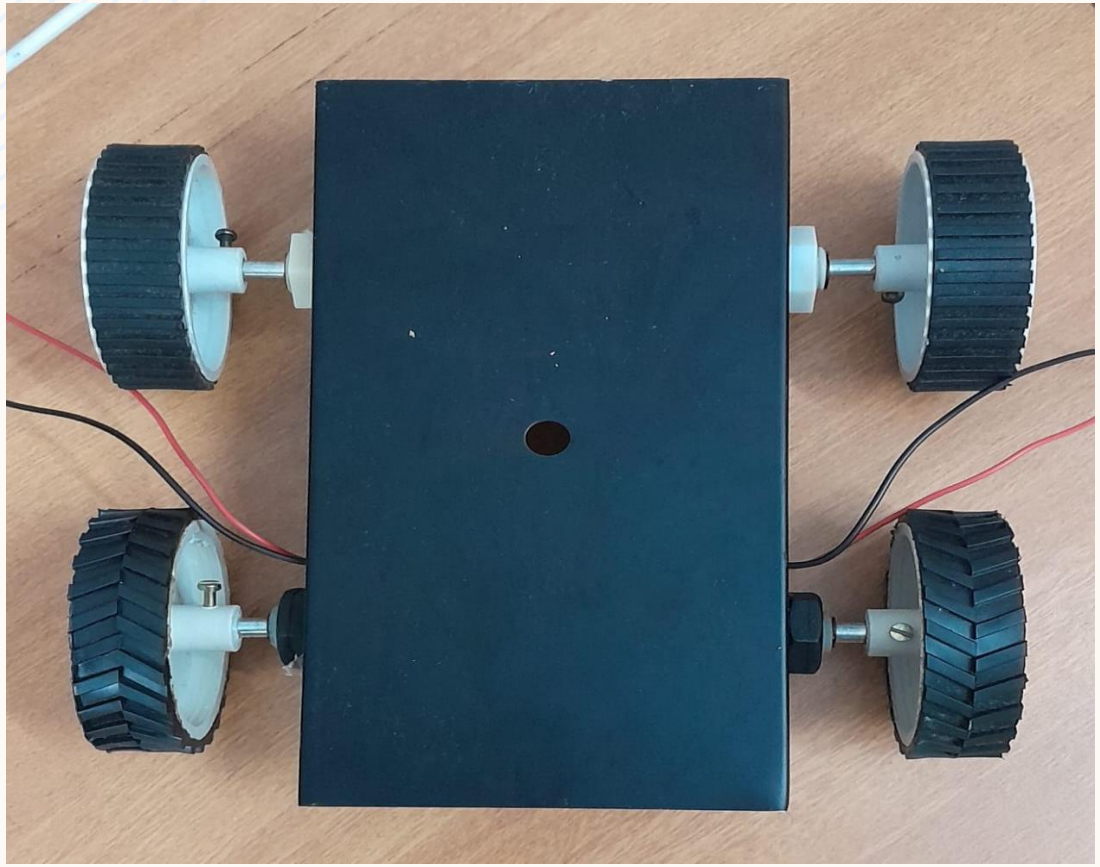
Chanukya Charyulu SVSK – 2022101120
Pratyush Jena – 2022111016
Saideekshith Vaddineni– 2022101110
Swaroop C – 2022101114

PROGRESS

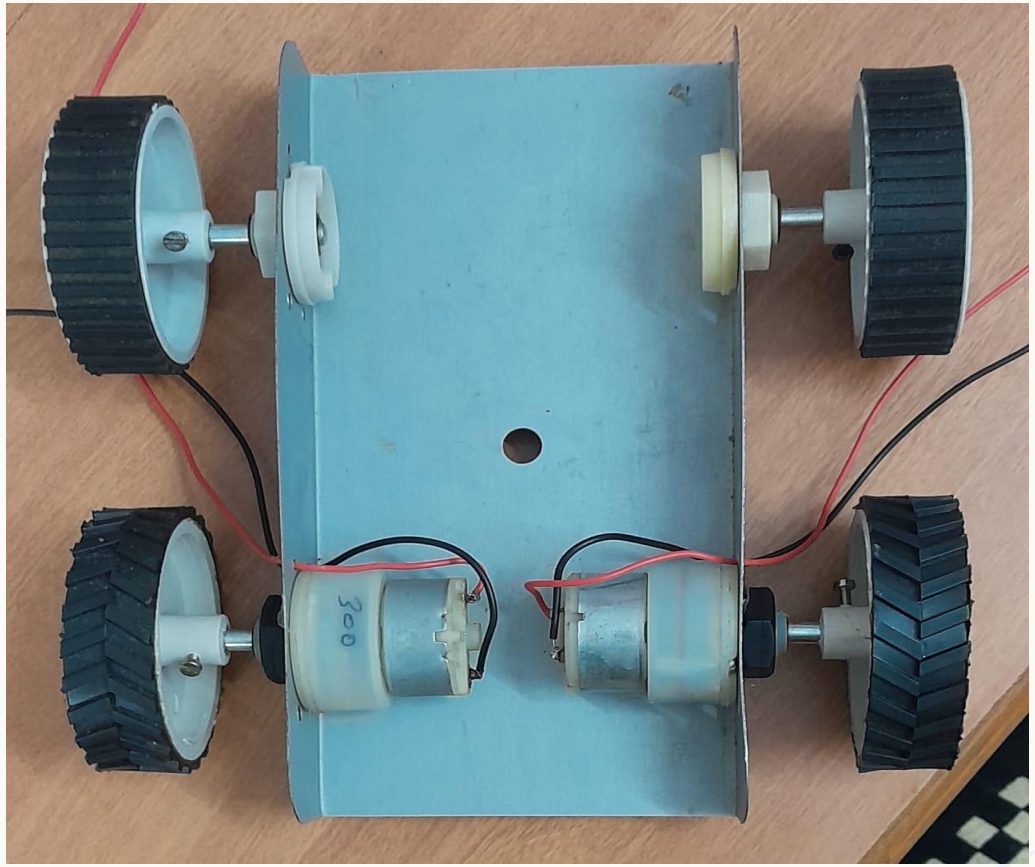
In the 1st lab since we got the parts:

1) We decided the robot design in which there will be a 4 socket metal body, so that we can have 4 wheels. Out of these 4 wheels the 2 at the front are attached to motors(these motors were handpicked after checking their functionality at 12 V) and the 2 behind are dummy wheels. After this, we attached the wheels along with motors to the metal body of the robot.

2) We soldered the wires connected to the motors for future usage.



Top View of Progress



Bottom View of Progress

PROJECT GOALS

The robot will accomplish the following by the end of our project:

1. **Obstacle Identification and localization**: The robot will successively detect the obstacles in its path. In addition to that, it also finds the position and relative size of the obstacle.
2. **Obstacle avoidance**: the robot will be capable of executing a safe path while avoiding obstacles in moving towards the destination. This involves making decisions such as slowing down, stopping or changing direction to steer clear of obstacles.
3. **Navigation**: Incorporating Obstacle avoidance into its navigation strategy, the robot will be able to move from one location to another safely.

“SCIENTIFIC OPPORTUNITIES ARE LIKE TRAINS. THERE'S ALWAYS ANOTHER ONE COMING.”

Mohammad Yashas Kutty Paul

FUTURE TIMELINE

SEP 26 2023	OCT 3 2023	OCT 31 2023	NOV 10 2023	NOV 15 2023
Finishing project design	Mid-evals: Servo and ultrasonic functioning + Obstacle avoidance algorithm research	Integration of code	Data Analysis	Final Presentaion

AREAS OF FOCUS

EFFICIENT MODEL

- Usage of limited amount of sensors to get maximum output i.e. data.
- Visually appealing model.

EFFICIENT ALGORITHM

- Usage an efficient potential field algorithm to get maximum accuracy.
- Servo and Ultrasonic motors also use efficient algorithms and their synchronization is a key part of this project.

SUMMARY

At GIGAHERTZ, we believe in giving 100%. As our TA says, "Efficiencies will come from proactively transforming how we incorporate science and technology in the real world."

THANK YOU