Autonomous Mobile Robots

Features

Docker-based ROS environment setup as part of CI/CD workflow

Teleoperation (WiFi based steering & throttle control)

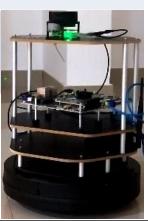
Mapping using 2D Lidar based SLAM (Gmapping/Hector SLAM)

Autonomous Navigation Probabilistic Path Planning (A* with Local Dynamic Window Approach) Localization (Particle Filter)

Dynamic Obstacle Detection & Avoidance Odometry – Sensor Fusion with IMU, Wheel Odometry, 2D Lidar Integrated with Camera [D435i]

Platforms

- NVIDIA AGX
- TI Jacinto 7





| Parameter | Observations |
|----------------------|--|
| Max Speed | .5 m/s |
| Obstacle Clearance | Depends on environment and navigation stack parameters |
| Max Payload | Tried for upto 3 Kg |
| Max rotational Speed | 180 degree/s |

