

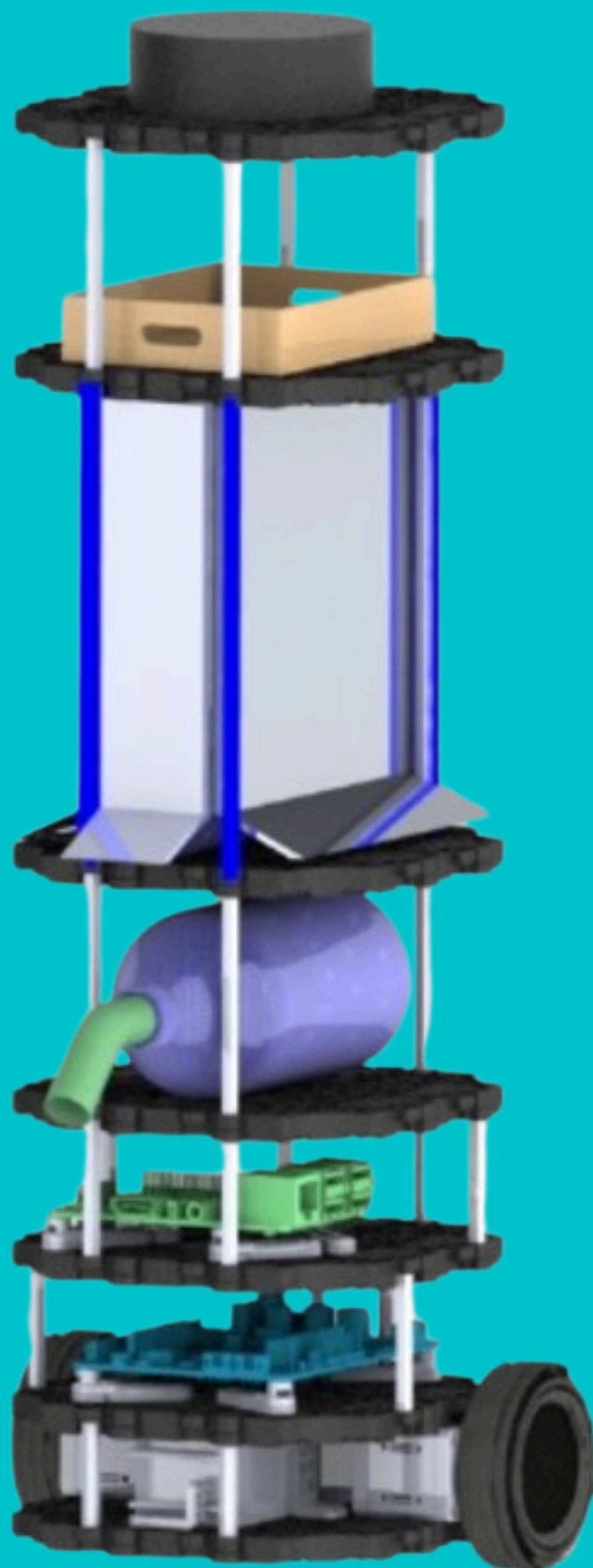
Autonomous Hospital Room Sanitization and Drug Delivery Rover Robot

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Objective

Design and implementation of a robot that handles the sanitization and logistics of hospitals:

- during critical conditions such as COVID-19 pandemic
- in areas where it is dangerous for humans to enter



Features

Navigation Features:

1. LiDAR mapping
2. Gazebo testing
3. Obstacle avoidance
4. Given a destination, the robot successfully reaches it and completes the task accurately

Sanitization Features:

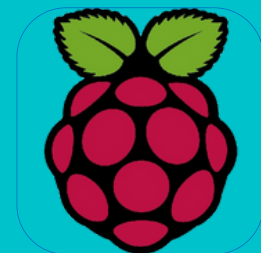
1. UV-C LEDs
2. Aluminum foil for increased emission
3. Dust/waste cleaning via vacuum
4. Sanitizing solution pump

Delivery Features:

1. Tray for food/medication delivery

Constraints

- 2D LiDAR detects all vertical features
- Doors of the rooms are connected to the robot using IoT
- The robot works in static environment
- No humans are present around the robot while it is working
- The robot delivers the items to the correct room



Core of Design

Controlling Unit

Navigation Orchestrator

Computer Vision Handling