DESIGN OF A TELEOPERATED ROBOT FOR INDUSTRIAL INSPECTION

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Design Requirements

SAFETY

TELEOPERATION

SENSOR SUITE

ACTUATION
MECHANISMS

Hardware Components

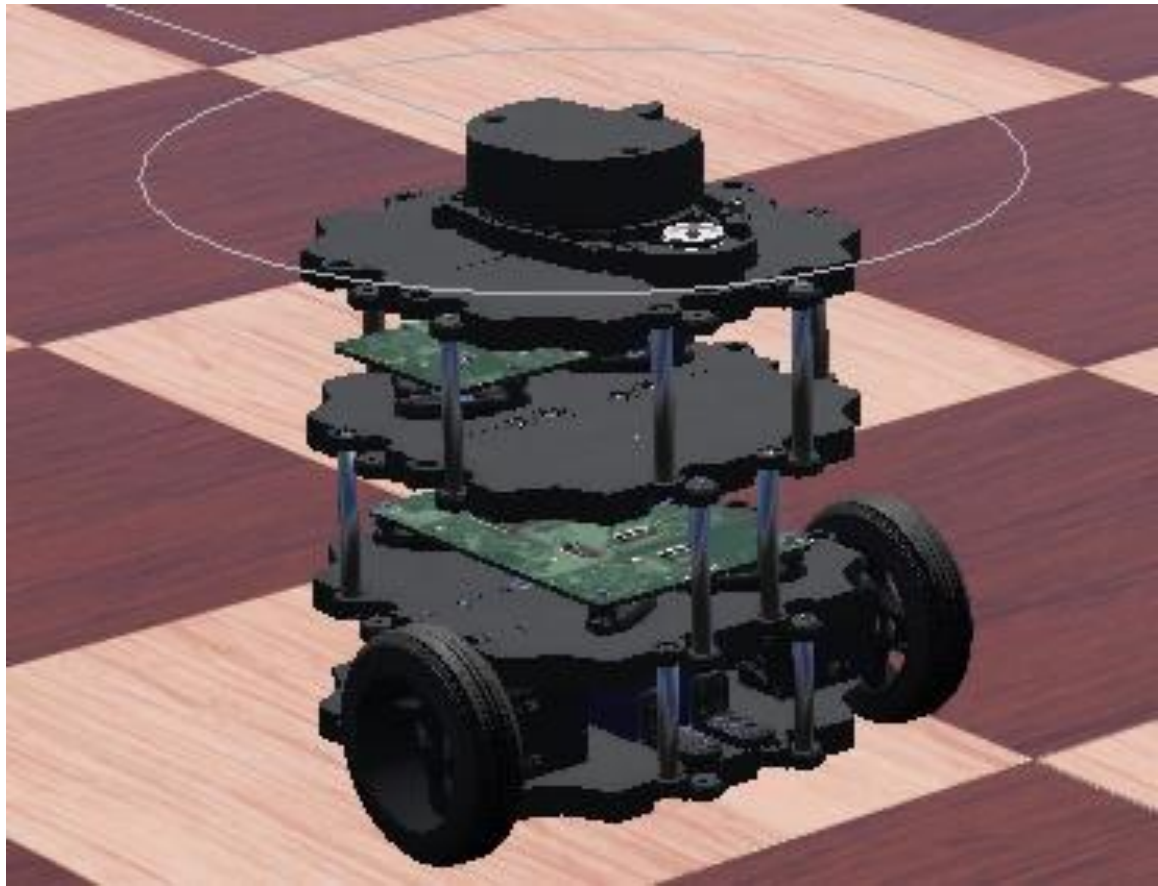
TurtleBot3

Sensor:

- Camera
- LiDAR

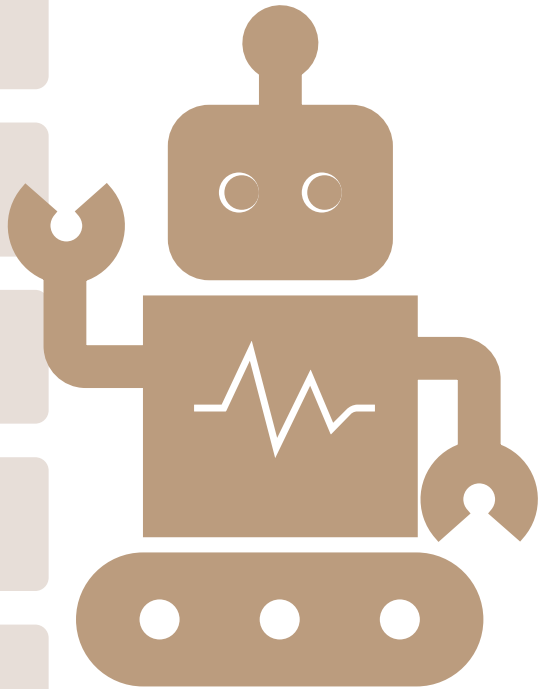
Communication:

- Wi-Fi
- MQTT



Software Architecture

- Perception: processes sensor data
- Input: handle input
- Control: control the robot’s motion and tool/sensor operations.
- Safety Monitoring: environmental conditions and robot status
- User Interface: web-based interface for teleoperation



Teleoperation Mechanism