

The Problem

To create an autonomous surveillance robot utilizing Jetson Nano (microprocessor), Arduino Board (microcontroller), Lidar, and mecanum wheels to conduct surveillance using a camera and live visual transmission.

The Solution

To tackle this issue, we have designed a robot that conducts surveillance by actively responding to its environment. It uses a camera to transmit real-time data and Rplidar to detect human objects.

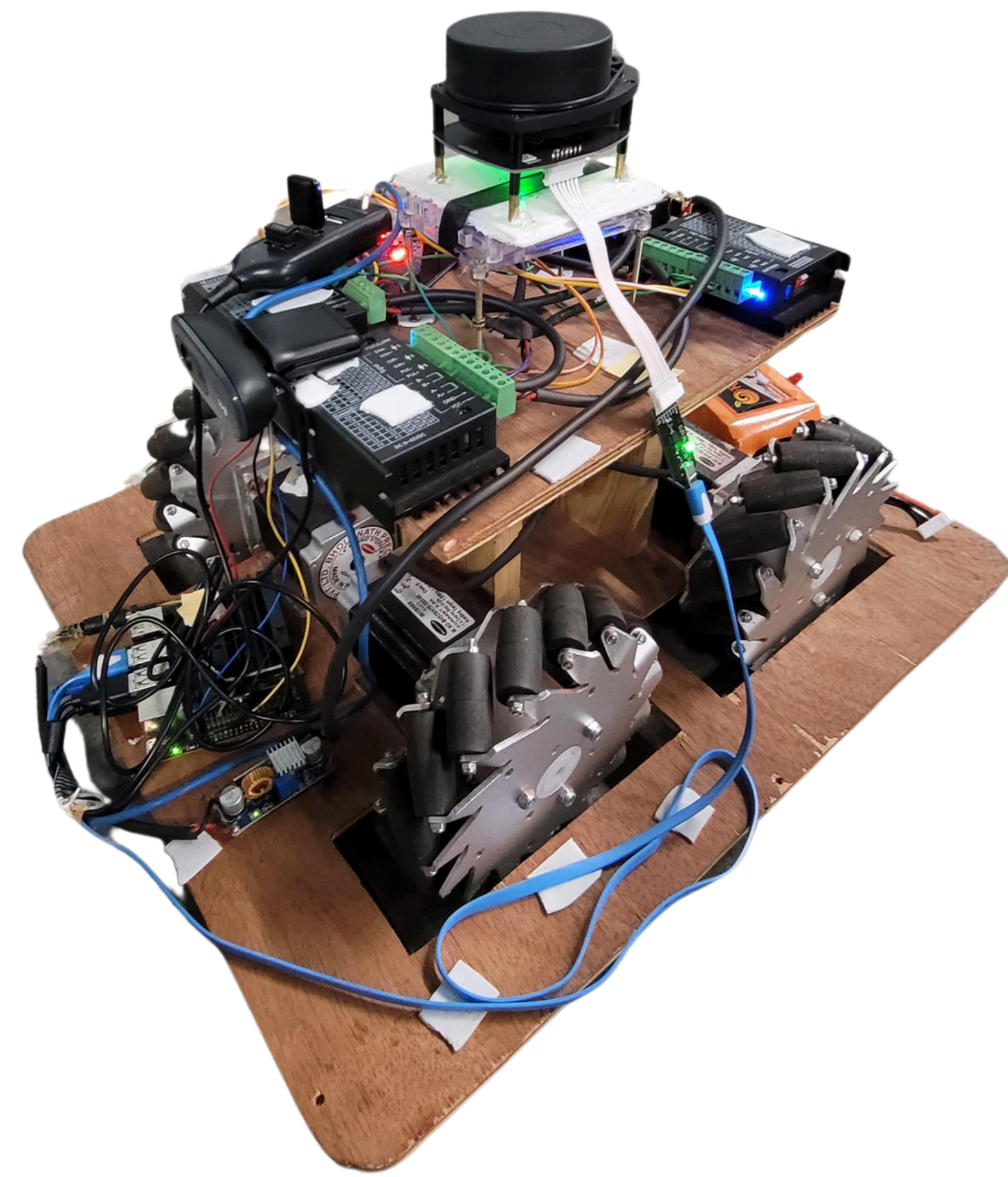


Fig.1.Surveillance Robot

Applications

Surveillance robots have various applications across different sectors:

- **Security and Law Enforcement:** Surveillance robots are used by security agencies and law enforcement for patrolling areas, monitoring activities, and providing real-time video feeds. They can be deployed in high-risk or hazardous areas to ensure the safety of personnel.
- **Industrial Inspection:** In industrial settings, surveillance robots can inspect hard-to-reach or dangerous areas, such as pipelines, power plants, and manufacturing facilities. They help identify issues like leaks, structural weaknesses, and equipment malfunctions without exposing humans to risk.
- **Military and Defense:** Military forces use surveillance robots for reconnaissance missions, border patrol, and battlefield monitoring. These robots can gather intelligence, detect threats, and provide situational awareness, enhancing the safety and effectiveness of military operations.
- **Disaster Response:** During natural disasters or emergencies, surveillance robots can be deployed to assess damage, locate survivors, and provide real-time information to rescue teams. They are instrumental in environments that are too dangerous or inaccessible for human responders.
- **Agriculture:** In agriculture, surveillance robots monitor crop health, soil conditions, and livestock. They can cover large farmland areas, providing valuable data to farmers for optimizing crop yield, detecting pests or diseases, and managing resources more efficiently."