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(57) Abstract :

Now, surveillance at night has proven to be a particularly challenging task. There are a few places where people find it difficult to focus on watching. Because it can identify trespassers in places like houses, buildings, and companies and report them to a nearby security control unit, a robot is an imperative necessity in this scenario. This project involves the development of a late-night guarding robot with an improved ability to detect and alarm if there is any human movement in the area, enabling precise monitoring. The Night Patrolling Robotic vehicle moves in an arbitrary direction while being observed. The monitoring framework uses an IR-based way-following technology to keep an eye on the designated zone. The creation of a robot is also governed by deterrent-recognizing sensors to prevent a collision. Using a camera mounted on the robot's top to take pictures, record them, and communicate them to the customer, it keeps an eye out for any disruptions in each zone. The client may also be shown the most recent video signs. This research proposed an intelligent wheeled mobile robot (WMR) for outdoor patrolling that combines path planning, fuzzy theory, neural networks, image processing, range sensors, camera, real-time kinematic (RTK) positioning system, and image processing. To identify and avoid obstacles, the robot system makes use of ultrasonic sensors, laser sensors, and fuzzy controllers. The GNSS RTK positioning system provides the beginning position and the target position of the WMR in an outside setting. The differential global positioning system is used to correct the robot's position in real-time. To determine the quickest route for patrol jobs, the robot system uses both the ant method and the Dijkstra algorithm. Utilizing convolutional neural network image processing, intruders that emerge in the patrol path are detected.

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