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IoT Social Distancing and Monitoring Robot for Queue

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Abstract: *Social distancing is of key importance during the current pandemic. It helps limit the spread of covid by observing distance between disease spreading individuals. Now it is not possible to station a person 24×7 at each queue to monitor social distancing violations. Banks, Public Offices, Malls, Schools, Theatres etc. usually see long queues for hours every day. To ensure social distancing in queues we hereby design a social distancing monitoring robot. The robot consists of a 4-wheel design system used to drive the robotic vehicle. It makes use of a line following principle to constantly move along with the queue and monitor for social distancing violations. The robot uses IR sensing to travel along with the queue to and fro in order to detect violations. The robot is equipped with obstacle detecting ultrasonic sensor in order to detect obstacles in the vehicle path. The robotic vehicle uses another ultrasonic sensor for detecting distance between 2 individuals in a queue. If any 2 individuals are found having less than 6 feet distance between them, the robot instantly sounds a buzzer and alert to inform about the violation. Also, it sends alerts of these violations along with a camera picture using Wi-Fi over IoT to inform the higher authorities/head office to update them about violations with proof so instant disciplinary action can be taken. Thus, this project allows for automatic maintaining social distancing in queues to help prevent spread of the virus.*

Keywords: Social Distancing, Robot, IoT

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