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An Autonomous Robotic Indoor Environment Surveillance System

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Abstract

We developed an autonomous mobile robot platform capable of following a path and gather environmental data, including temperature, humidity, light intensity, etc. The robot is capable of detecting the path using its camera and correct most navigational errors, while the sensors support a limited set of instructions regarding which sensor data to collect and how often. Our experiment consisted of having the robot follow a looped path we set up in BU004 Lab. The robot was able to complete the loop and gather sensor data for light intensity, humidity and temperature at a frequency of once per second, and also positional data provided by the robot at around the same frequency.