

CAN Newsletter Online

CORONAVIRUS

Utilizing service robots to prevent the spread of Covid-19

The Boxer-8110AI fanless embedded box PC from Aaeon is deployed to power automated service robots, helping to reduce person-to-person contact during the corona pandemic. It uses two embedded CAN networks.



The service robots are currently used in hotels but could soon be helpful in hospitals, too to reduce person-to-person contact during the pandemic (Source: Stock Adobe)

The company has worked with customers to deploy the box PC to power automated service robots in hotels and other service industries. With the ongoing coronavirus Sars-CoV-2 pandemic (disease is called Covid-19), many countries and communities have banned large assemblies and events, and advised citizens to avoid unnecessary meetings and reduce contact through practicing social isolation. One tool several hotels have deployed, even prior to the outbreak of the pandemic, is the automated service robot. Providing room service autonomously helps to reduce disease vectors between guests and staff, as well as lighten the workload during seasons of high service demand. The company's customers have developed a service robot powered by the Boxer-8110AI which is already operating in several hotels.

The product with Nvidia Jetson TX2 powers the robot, helping it to navigate through hotels and service facilities. Coupled with a 3D camera, the device analyzes the surrounding environment, determining the best path to its destination, avoiding obstacles and people. Connecting wirelessly, the box PC allows the robot to call and control elevators to reach the correct floor. The robot can use its own sensors, as well as those of the elevator, to determine if the elevator is too crowded to enter and avoid bumping into guests or the elevator itself. Once at the correct room, the robot connects wirelessly to ring the doorbell and alert guests of its arrival. A touchscreen on the robot provides guests with instructions to receive their ordered items. Once finished, the service robot automatically returns to its original location.



The Boxer-8110AI's CAN means it can support industrial automation and in-vehicle applications (Source: Aaeon)

The embedded box PC is built for artificial intelligence (AI) and edge computing applications. As already mentioned, it features the Nvidia Jetson TX2 SoC, equipped with 256 Cuda cores for powering AI inferences and deep learning frameworks including Tensorflow, Caffe2, and MXNet, as well as supports software developed by users. The device features I/O ports including two CAN and COM ports used for machine and motor control. The rugged and fanless design of the box PC allows for operation in a range of temperatures and environments, allowing deployment in various tasks.

“While this particular use case has been deployed in hotels, the company is currently working with developers and customers to provide a similar solution for deployment in hospitals to deliver food and other supplies to quarantine rooms or even negative pressure wards,” said Alex Hsueh, Director of Aaeon’s System Platform Division.

“Hospital staff can ensure the different nutritional needs of patients are met by delivering meals directly to each ward. This not only reduces risk of infection through unnecessary contact between staff and quarantined patients, but can help reduce workload during a time when hospitals are at risk of being overburdened with patients. By applying this application vital services can continue uninterrupted while preventing further spread of disease,” Alex added.

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