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Enabling user-oriented features at the edge: A case of an IoT-based smart shopping
cart

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Abstract:

In this work, we proposed an automated smart cart system for use in the shopping industry. A smart cart equipped with sensors and computing resources would classify as an edge device for the Industrial Internet of Things (IIoT). In our design of the cart, we take advantage of the onboard computing resources to perform the image processing necessary for tracking the cart user. The smart cart can recognize the shopper and follow them around the mall as they shop. This feature enabled the edge computing resource in the embedded single board computer (SBC) would be helpful to people finding it difficult to push a heavy cart around the mall. The SCB used in our implementation is an Odroid C2 which is interfaced with a microcontroller, sensors, and a web application required for a digital cart representation.