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Wireless doormat to measure customer frequencies

When talking about process- and work optimization, as well as marketing information, data collection and statistical evaluation are crucial. If someone is able to interpret the behaviour of people and come to meaningful conclusions, lots of processes can be adjusted to increase efficiency.

The goal of this project is to measure people flow. With that, store managers will be able to analyse their volume of customers, adjust opening hours and improve shift plans. The development of a prototype, which is able to identify different people and their direction of movement, is documented. It is essential, that the solution is flexible, wireless, cost-effective and always ensures the anonymity of the person using it at any time.

To start with, the already existing market has been analysed, and different methods of measuring customer frequencies were worked out.

These analyses showed that pressure sensors, which are arranged in a matrix-form, are very practicable. They can be mounted to a doormat without complex assembly. The developed algorithms ensure, that the mat is able to detect the direction of movement with an accuracy of 97%. With a built-in LoRa module, the measured data is sent wirelessly to a server, where they can be further processed.

These results make us optimistic that this form of technology can soon be considered in day-to-day business.
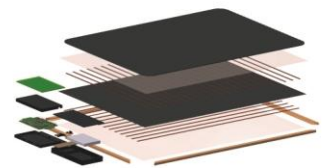
Diplomierende
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Adrian Rosenast

Dozent
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Doormat during fieldtest

Composition of the Velostat doormat