2016

Documenting of the exiperiment
Robots sorting end-of-life textiles

OBJECTIVE: The objective of the experiment was to find out whether robots can be used to sort textile waste fractions efficiently and, as far as reuse is concerned, profitably. The main question was whether the robot can correctly identify the waste fraction. The experiment was carried out for Zen Robotics, the first company in the world to make smart waste sorting robots.

EXECUTION: Collaboration with Zen Robotics culminated in October 2016, when TUAS students/assistants, together with the Zen Robotics testing team, trained robots to identify different textiles by feeding waste fractions on the conveyor belt under a sensor. Before that, material had been collected and transferred to the test site.

COOPERATION: The experiment was carried out in cooperation with Zen Robotics and organizations involved in the Textile 2.0 pilot.

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VARIABLES: The variables in this experiment are the success rates of the robots in identifying the different textile materials.

EXPECTATIONS: The expectations were cautiously optimistic: Zen Robotics was confident that the robots can identify the textile fractions.

END RESULTS: The end result fulfilled the expectations. The robots learned to identify the textiles. Previously, the sorting of textiles was slow manual work and, in order to make reuse more efficient, a better approach is needed. The use of robots in the sorting of textile fractions is just such an approach and is a step towards economically viable sorting, as well as increased and more efficient reuse.

CONCLUSIONS: The use of robots in the sorting of end-of-life textiles offers many new possibilities, but further development is still needed for it to be a truly viable solution. Zen Robotics continues with the development work.

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