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Evaluating the Tracking Abilities of Microsoft HoloLens-1 for Small-Scale Industrial Processes

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Abstract : This study evaluates the accuracy of Microsoft HoloLens (Version 1) for small-scale industrial activities, comparing its measurements to ground truth data from a Kuka Robotics arm. Two experiments were conducted to assess its position-tracking capabilities, revealing that the HoloLens device is effective for measuring the position of dynamic objects with small dimensions. However, its precision is affected by the velocity of the trajectory and its position within the device's field of view. While the HoloLens device may be suitable for small-scale tasks, its limitations for more complex and demanding applications requiring high precision and accuracy must be considered. The findings can guide the use of HoloLens devices in industrial applications and contribute to the development of more effective and reliable position-tracking systems.

Keywords : augmented reality (AR), Microsoft HoloLens, object tracking, industrial processes, manufacturing processes
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