# Review of: "Design and Realization of a Low-Cost Smart Walking Aid for Visually Impaired and Blind People"

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Potential competing interests: No potential competing interests to declare.

This is a significant work at the undergraduate level. The level of detail provided in the paper is appropriate for the intended audience, which includes both technical and non-technical readers. The paper provides a detailed and comprehensive account of the design, implementation, and evaluation of the smart stick prototype. The performance of the smart stick prototype is evaluated through rigorous testing under various conditions, including assessments of both the ultrasonic sensor system and the water sensor system to ascertain their accuracy in detecting obstacles at different distances from the sensors. The novelty of the smart stick prototype includes its low cost and lightweight design. However, there are a few suggestions:

1. A thorough literature review is missing in this work that compares your system with existing technologies. Carefully highlighting the novelty and improvements made by your system in comparison to the existing work will enhance the overall impact of your research. A literature review may include more recent references to support the present state of the artwork.
2. The POE (percentage of error) is a commonly used metric to evaluate the performance of obstacle detection and water sensing systems, as it provides a quantitative measure of the accuracy of the system. However, it would be good to evaluate the performance of systems with other metrics such as precision, recall, and F1 score.
3. The paper provides a comprehensive evaluation of the prototype's performance through extensive testing, revealing an impressive maximum obstacle detection range of approximately 2 meters on average. However, the paper does not provide a direct comparison with other similar works. Also, how fast is the system in terms of the processing time and alert signal generation of the smart stick prototype? It would be good if the author included some cases of a walking person, and their speed to get an idea of its effectiveness in real time.
4. Highlighting possible drawbacks of this study could be crucial for guiding future research directions.
5. The images can be reformatted to get better visualization.