

# 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.

The paper presents a cost-effective smart walking aid for the visually impaired, integrating ultrasonic and water sensors. This device stands out for its ability to detect both solid obstacles and water presence, catering to a broader demographic. The emphasis on affordability is a key strength in the context of assistive technologies. The authors did a decent job, although its completeness and real novelty of the paper are, to me, still doubtful.

1. The introduction lacks clarity regarding the research problem and objectives, making it challenging for readers to grasp the study's significance.
2. The absence of a comprehensive literature review diminishes the paper's academic impact. A thorough review would provide context, highlight existing solutions, and emphasize the novelty of the proposed device in comparison to other similar technologies.
3. Design and Realization section lacks sufficient detail, providing limited insights into the experimental setup and data collection processes.
4. While the performance evaluation is thorough, the paper lacks a comparison with existing techniques in terms of accuracy and cost.
5. The analysis of results is not robust, and the discussion section fails to effectively connect findings to the broader research context.
6. The conclusion falls short in summarizing the key contributions and potential impact of the research, leaving readers without a clear takeaway.
7. Figures 1, 5, and 6 suffer from readability issues. Clear and legible visuals are essential for conveying the technical details effectively.
8. The paper's content demonstrates a lack of clarity in both the structure of sections and grammatical precision.
9. Overall, the paper requires substantial improvements in framing the research problem, conducting a comprehensive literature review, detailing the methodology, and thoroughly analyzing and contextualizing the results to enhance its scientific contribution and structure.

**Recommendations:**

Provide a more in-depth performance evaluation by comparing the proposed device with existing solutions. Acknowledge and discuss the limitations of using simulated data, and consider incorporating real-world data for a more realistic evaluation. Its recommended to compare your results with papers like [10.1109/ICCES51350.2021.9489010](https://doi.org/10.1109/ICCES51350.2021.9489010),

[10.1109/ICASERT.2019.8934566](https://doi.org/10.1109/ICASERT.2019.8934566) and [10.1109/AllIoT54504.2022.9817322](https://doi.org/10.1109/AllIoT54504.2022.9817322) etc.

Decision:

The paper shows promise with its advanced approach to assistive technology but requires improvements in literature review and performance evaluation to strengthen its contribution to the field. The submitted manuscript needs to be revised for publication in the Journal. The novelty and scientific contribution of the paper were not deemed advanced enough for publication.