

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 paper introduces a novel smart walking assist device designed for individuals with visual impairments. The primary innovation, as claimed by the author, lies in the utilization of a combination of haptic feedback through vibrator motors and auditory feedback through sound. However, several critical issues are evident in this paper:

1. **Ambiguity in Novelty:** The paper lacks clarity regarding its novelty. It appears to present a design in an already well-established field. While the authors suggest that the novelty is in the implementation of haptic feedback, this assertion is open to debate. For instance, a similar concept was explored in a prior publication, which is not cited in this paper (Reference: "Haptic based walking stick for visually impaired people" by M. P. Menikdiwela, K. M. I. S. Dharmasena, and A. M. H. S. Abeykoon, 2013). To address this, a dedicated section should be included to explicitly justify the uniqueness of this paper.
2. **Inadequate Citations:** A more comprehensive literature review is needed to provide a thorough overview of existing walking aid devices and the various types of feedback they incorporate. Ideally, 20 to 30 relevant papers should be cited to underscore the distinctiveness of this work.
3. **Prototype Quality:** The prototype presented in the paper does not meet professional design standards. An enhanced engineering approach is recommended to improve the overall quality and functionality of the device.
4. **Absence of Human Subject Experiments:** Given the presumed novelty in Human-Machine Interaction (HMI), it is crucial to conduct human subject experiments to validate the device's performance. A comparison with baseline methods should be part of the evaluation. Utilize existing research on haptic feedback as a reference for performance assessment.

In summary, the paper would benefit from clarifying its novelty, expanding the literature review, refining the prototype design, and incorporating human subject experiments to enhance the credibility and relevance of this research.