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

Ruben Fuentes-Alvarez[1]

1 Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)

Potential competing interests: No potential competing interests to declare.

The paper "Design and Realization of a Low-Cost Smart Walking Aid for Visually Impaired and Blind People" introduces a smart walking aid designed to enhance the mobility and independence of visually impaired and blind individuals. The device offers a combination of haptic feedback through vibrator motors and auditory feedback through sound, providing users with timely and effective alerts to obstacles in their path. The authors highlight the affordability, responsiveness, minimal power consumption, lightweight design, and water detection features of their device, making it a compelling solution for those with visual impairments.

Areas for Improvement

While the paper presents a promising new approach, there are areas that could be further strengthened. The authors could provide a more detailed explanation of the device's novelty compared to existing smart walking aids. Additionally, a more comprehensive literature review would provide a stronger contextual framework for the device's development.

To further validate the device's effectiveness and usability, the inclusion of human subject experiments would be valuable. Comparing the device's performance against existing walking aids and incorporating existing research on haptic feedback would provide a more rigorous assessment of its strengths and limitations.

Addressing Reviewer Concerns

The reviewers have raised valid concerns regarding the paper's organization, novelty, and the need for human subject experiments. The authors should address these concerns by:

Organization: Reorganize the paper to enhance clarity and flow, particularly in the abstract section.

Novelty: Clearly articulate the device's unique contributions and provide a comprehensive comparison with existing smart walking aids.

Human Subject Experiments: Incorporate human subject experiments to evaluate the device's performance in real-world settings and compare it against existing solutions.

Addressing Specific Points

Regarding the reviewers' specific points:

Excessive Noise: Acknowledge the possibility of noise interference and discuss potential solutions, such as adjustable volume or adaptive filtering.

Cane Inclination: Consider the impact of cane inclination on sensor placement and explore strategies for maintaining optimal performance across different user orientations.

Automated Alarms: Investigate the feasibility of automated alarm mechanisms to provide emergency assistance without requiring user input.