Comprehensive Survey of Assistive Technologies and Applications Designed to Enhance the Mobility and Independence of Visually Impaired Individuals

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Abstract

This paper presents a comprehensive survey of assistive technologies & applications developed to support visually impaired individuals, emphasizing their needs, preferences, and the effectiveness of current solutions. The survey highlights various assistive technologies designed for activities such as navigation, object identification, and environmental awareness. Findings from the analysis suggest that while advancements in sensory substitution devices, navigation aids, and image recognition applications have been made, significant gaps remain in addressing specific challenges faced by visually impaired people, particularly in outdoor environments. The survey also identifies areas for improvement in the accessibility and user-friendliness of these solutions, as well as opportunities for future research to bridge these gaps, ultimately aiming to enhance the autonomy and quality of life for visually impaired individuals.

Keywords

Visual impaired people, blind assistance, computer vision, mobile application, sight.