

Mobile Application for Visually Impaired: A Review

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Abstract

People with visual impairments face several challenges throughout their daily lives, including navigation, access to information, and social interactions, which limit their independence and ability to fully engage with society. With the rapid advancement of technology, it has become possible to develop mobile applications as helpful solutions that address these unique issues faced by individuals with visual impairments. This review paper provides a thorough examination of mobile applications designed expressly for visually impaired users, with an emphasis on navigation and way-finding, object recognition, text-to-speech, and social interaction. The functionality, user interfaces, usability features, and efficacy of these programs are analyzed by a thorough assessment of relevant research papers and studies. The evaluation focuses on the wide range of mobile applications available to assist visually impaired people in various parts of their everyday lives as well as the limitations of those existing systems. Furthermore, this review discusses the use of GPS technology for navigation and way-finding, as well as machine learning and computer vision methods for object recognition such as the YOLO3 algorithm as well as AI and sensor technology for real-time object detection. The success of current mobile applications is highlighted in the discussion and future work section, along with suggestions for improvement and to achieve an excellent user experience. Overall, this review highlights how important it is for mobile technology to keep evolving in order to provide accessibility and better the lives of those who are blind or visually impaired.

Keywords: *Mobile applications, Visual impairment, Navigation, Object recognition, GPS technology, Machine learning, Computer vision, Text-to-speech*