



**AUDIOVISION – VISUAL IMPAIRMENT
ASSISTANCE APPLICATION**

UNDERGRADUATE THESIS

**Submitted as one of the requirements to obtain
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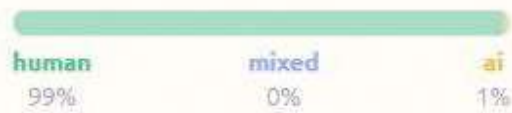
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ABSTRACT

Navigating through everyday environments poses significant challenges for impaired individuals, particularly when it comes to aviation settings where safety and precision are paramount. This thesis presents the development of an innovative mobile application designed to assist impaired individuals in navigating these complex environments with greater ease and confidence. Our application, built with Google Maps integration, incorporates advanced object detection functionality to enhance the user experience and provide crucial navigational aid.

Unlike conventional navigation apps, our app features a camera view integrated into the navigation interface. This allows users to hold their phones facing forward while walking, enabling the app to detect and recognize objects in their path. By leveraging real-time image processing and machine learning algorithms, the system identifies obstacles and provides immediate feedback to the user, ensuring a safer and more informed journey.

This application not only facilitates independent navigation but also empowers impaired individuals by increasing their mobility and confidence in unfamiliar or challenging settings. The development process, technical specifications, and user testing outcomes discussed in this thesis demonstrate the app's potential to significantly improve the quality of life for impaired individuals, particularly in the aviation context.

Through this work, we aim to contribute to the growing field of assistive technology and underscore the importance of inclusivity in technological advancements. We believe this app will serve as a vital tool in bridging the gap between impaired individuals and their environments, fostering greater independence and accessibility.

Keyword: google maps integration, technology, accessibility, real-time image, object detection

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