



TEAM 3 - OPTICLE: Guiding Vision for the Visually Impaired

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Abstract

Visual impairment impacts millions of people all over the world annually. It has a significant impact on individuals, affecting their quality of life, independence, and mobility. Current mobility aid solutions are limited in detecting off-ground obstacles, do not provide semantic information, and are not always suitable for all age groups. To address this issue, we propose Opticle, a wearable technology that detects obstacles in an outdoor environment with a depth-sensing AI camera and alerts users when any immediate obstacle is detected with haptic feedback and auditory output. The user will wear a chest mount with a camera in the center, a wrist mount with a linear resonant actuator, and bone conducting headphones. Our hope is to provide a solution that allows visually impaired individuals to feel more confident mapping their environments and maintaining their independence when navigating outdoor areas.