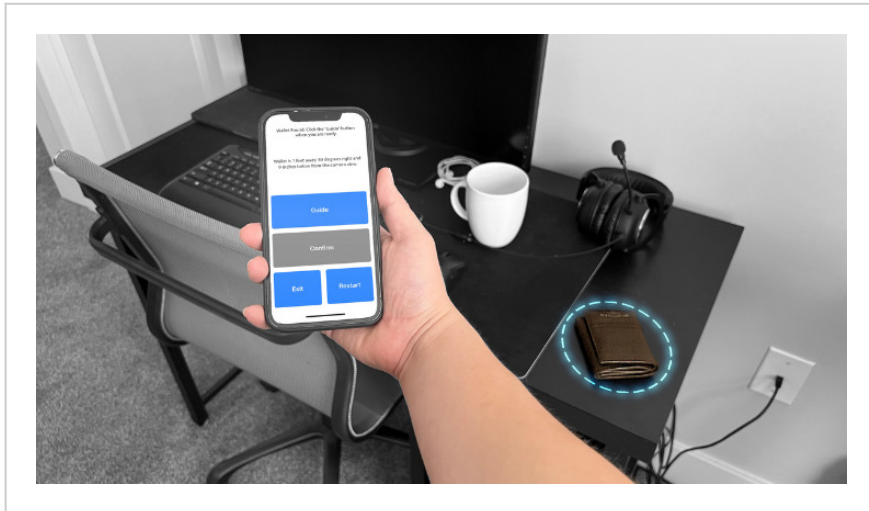# Mobile Device to Aid in Picking an Object for the Visually Impaired

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The object tracking system in use

Technology Summary

Locating and grasping objects is a critical task in people's daily lives. For people with visual impairments, this task can be a daily struggle. The support of augmented reality frameworks in smartphones has the potential to overcome the limitations of current object detection applications designed for people with visual impairments. This technology comprises a self-contained offline smartphone application that leverages augmented reality technology to help users locate and pick up objects around them. User studies were conducted to validate its effectiveness at providing guidance, compare it to other assistive technology form factors, evaluate the use of multimodal feedback, and provide feedback about the overall experience. Results show that AIGuide is a promising technology to help people with visual impairments locate and acquire objects in their daily routine.

Application & Market Utility

This technology solves the problem of tracking the hand (to the "last few inches") with respect to objects around it. Similar technologies use: headworn camera systems, hand tracking with respect to objects in shelves, etc. This system uses a wristband that uses radio frequencies or ultrasonic pulses along with wired gloves to track the hand position and gestures. In contrast to other technologies, this system uses the smartphone as tracking and computing device. Since the user's hand will hold the phone, its position is known. This system could be used to guide people with visual impairments to objects.

Next Steps

The research team seeks investment and licensing opportunities.

TECHNOLOGY READINESS LEVEL	4-7

Seeking

Investment | Licensing | Research

Keywords

- Assistive technology
- Augmented reality
- Mobile computing
- Visually impaired assistance
- Accessibility technologies

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