“Unfold and Go Touch”: A Portable Method for Making Existing Touchscreens Accessible to Blind and Low Vision People in Self-Service Terminals

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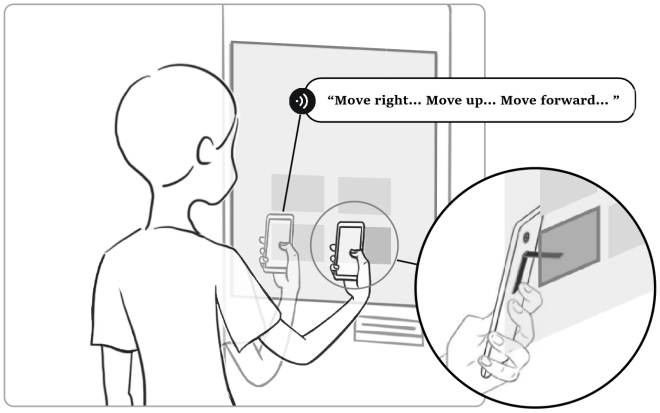

Figure 1: We proposed a voice-based interactive method using a conductive folding stand with the phone camera to allow BLV people to access both touchscreens of SSTs. User moves the phone close to the button according to the voice feedback and touch the button with the end of stand.

ABSTRACT

Self-service terminals (SSTs) are almost everywhere in our daily life and increasingly use capacitive and infrared touchscreens as the interface. Most of the current solutions to help blind and low vision (BLV) people access existing touchscreens mostly are only suitable for capacitive touchscreens and not for infrared touchscreens. In this paper, we proposed a voice-based interactive method using a conductive folding stand with the phone camera to allow BLV people to access both touchscreens of SSTs. Voice feedback was provided to guide users to move the phone close to the button and touch it with the end of the unfolded stand. Using a portable accessory, this method directly guided users to touch the target and effectively avoids false triggering. A preliminary evaluation indicated that our approach enabled users to access the target buttons on the touchscreen with high accuracy and a short completion time.

CCS CONCEPTS

• **Human-centered computing** → **Accessibility systems and tools**.

KEYWORDS

Non-visual interfaces, visually impaired users, accessibility, computer vision, mobile devices

CHI EA '23, April 23–28, 2023, Hamburg, Germany

ACM ISBN 978-1-4503-9422-2/23/04.
https://doi.org/10.1145/3544549.3585819

ACM Reference Format:
Weiyue Lin, Ting Li, Liu Liu, and Qian Zhu. 2023. “Unfold and Go Touch”: A Portable Method for Making Existing Touchscreens Accessible to Blind and Low Vision People in Self-Service Terminals. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems (CHI EA '23), April 23–28, 2023, Hamburg, Germany*. ACM, New York, NY, USA, 7 pages. https://doi.org/10.1145/3544549.3585819