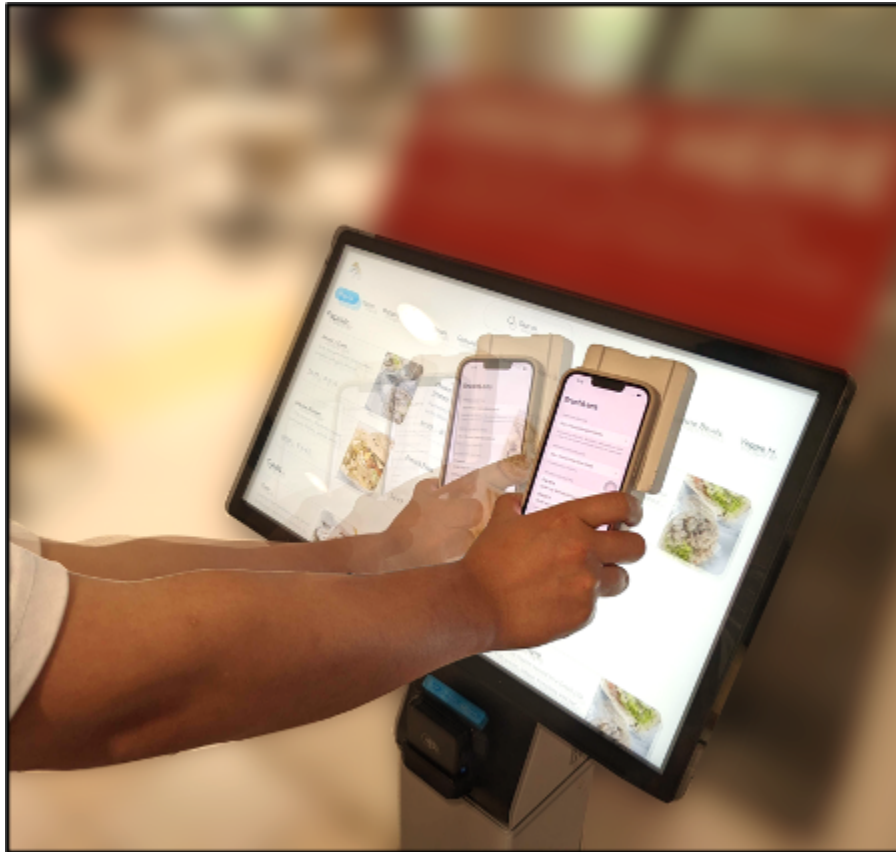October 23, 2023
Contacts: Derek Smith, 734-546-3632, smitdere@umich.edu
   Katherine McAlpine, kmca@umich.edu

Captions: New phone case makes touchscreens more accessible


BrushLens.jpg: BrushLens helps users interface with touchscreens by perceiving, locating, and tapping the screen on their behalf, which makes touchscreens more accessible. Credit: Chen Liang, doctoral student, Computer Science and Engineering, University of Michigan.

Alt text: A touchscreen monitor displays several food items on a menu. The monitor's screen is backlit and the frame is black. Someone is holding a smartphone connected to BrushLens against the screen while moving it from left to right. BrushLens appears as an off-white case around the edges of the phone.
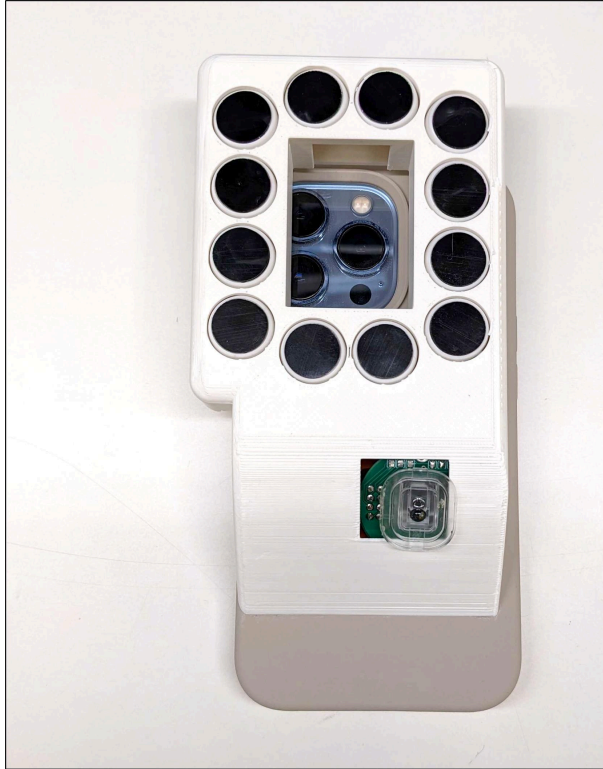
Clickers.jpg: Autoclickers on the bottom of Brushlens tap the screen for users, which helps people with tremors and spasms tap their desired option on the screen. A window in the center of the case allows the phone's camera to view the items on the touchscreen menu. Credit: Chen Liang, doctoral student, Computer Science and Engineering, University of Michigan.

Alt text: The picture shows the underside of BrushLens, a white phone case. A window in the center of the case reveals a smartphone camera. Thirteen black circles, which are the clickers, surround the window in a circle.
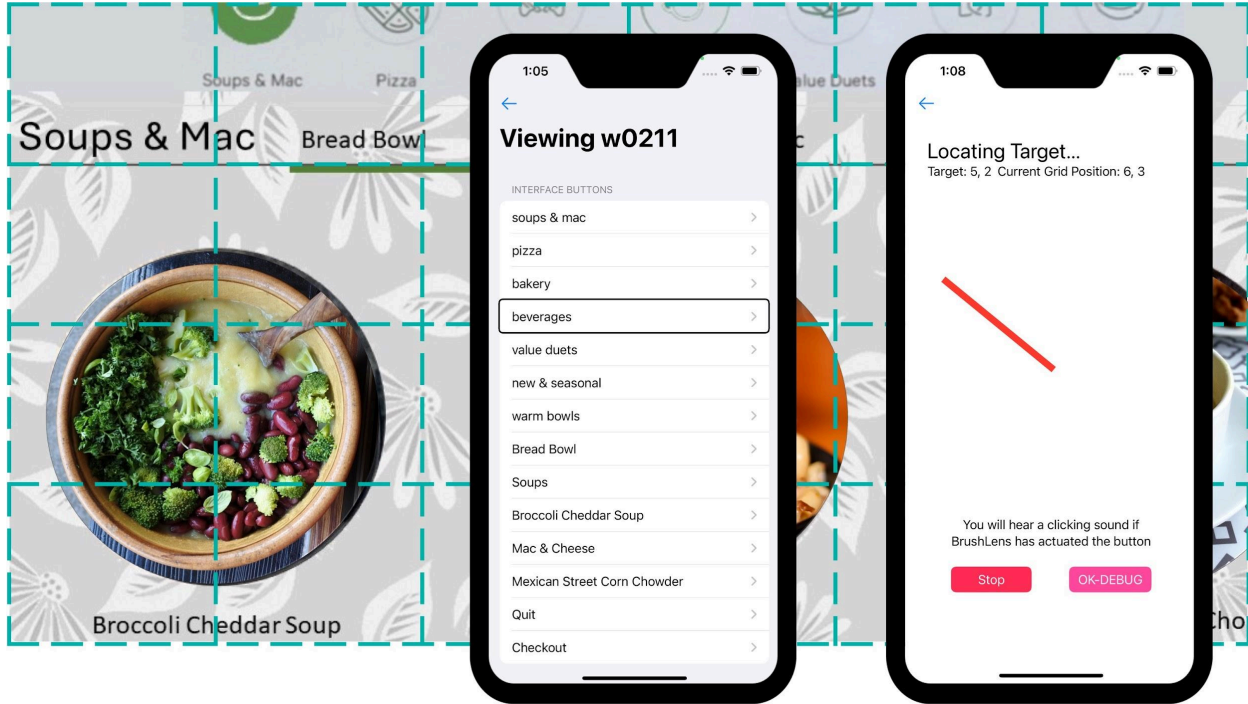
Guiding_feature.jpg: Once the user indicates their menu choice, the BrushLens companion app will direct users to the correct location on the screen. The device connects wirelessly to the app. Credit: Chen Liang, doctoral student, Computer Science and Engineering, University of Michigan.

Alt text: A touchscreen menu shows a picture of a salad bowl with broccoli cheddar soup. Green dashed lines divide the menu into grids. Two black-bordered rectangles, which are smartphones, are resting over the right-hand portion of the screen. The leftmost phone shows a list of menu items to choose from. The rightmost phone displays a large red arrow in the center of the phone screen that is pointing to a chosen menu item. A message below the arrow reads "You will hear a clicking sound if BrushLens has actuated the button."
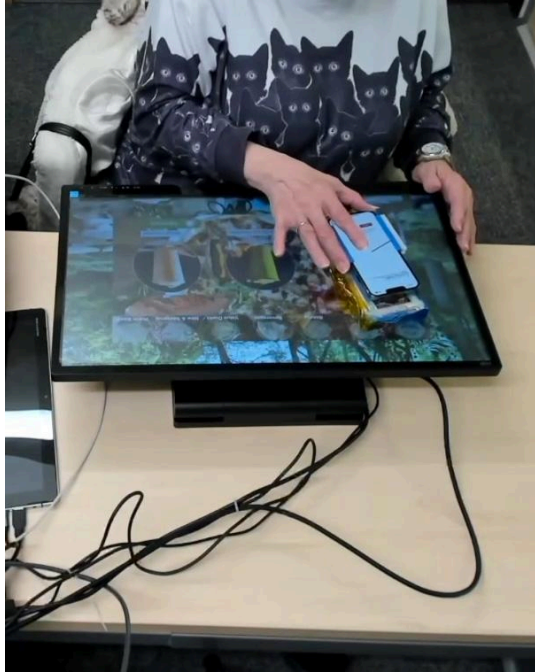
blind_participant.jpg: BrushLens helped people with visual impairments locate items on a touchscreen menu in study trials. Credit: Chen Liang, doctoral student, Computer Science and Engineering, University of Michigan.

Alt text: A person is sitting at a tan-colored desk. A black-bordered screen lays flat on the desk and displays a green menu with several images of drinks. Several black cords are connected to the screen and run off the desk. The person is moving a phone inside a BrushLens phone case across the screen. A red arrow is point to her menu choice in the top right corner of the screen, from the viewer's perspective.

All images