Motivation

- Apple’s iPhone and iPad has transformed touch interfaces into a dominant and widely popular modality for Human Computer Interaction.
- For visually impaired people: Touch interfaces coupled with TTS open up intriguing possibilities for easy and fast web browsing.

VoiceOver

- Apple’s VoiceOver is the only exemplar of a touch-based screen reader.
- **Swipe Interface**: gestures only allow forward or backward traversal on the DOM tree.
- **Drag Interface**: allows VoiceOver users to read the screen content by "touching the content".

Directional Navigation

- **The Swipe Interface**: We augmented the swipe gestures with explicit directions, not only horizontal and vertical.
- **The Drag Interface**: We imposed a bound on the drag length in the dragging interface, for better control.

Illustration

- **Input**: Current Element, Direction of swipe
- **Output**: Next Element

Experimental Setup & Results

- Two screen readers were used in our evaluation:
  - Apple’s VoiceOver (VO)
  - HearSay (HS)
- For our experiments we chose large HTML tables containing columns and cells of varying sizes.
- Tables serve as good benchmarks for evaluating touch-based navigations because one can design tasks that are consistent and measurable.
- We measured the time it took the subject to complete their assigned tasks.

Approach

- The first idea is to extend the swipe interface by augmenting swipes with directions.
- The second idea is to impose a bound on the drag length in the drag interface.

Future Work

- Explore the applicability of multi-touch to web accessibility.
- The use of multi-touch gestures in non-visual web access can create new user experiences.