# Gaze and Touch

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## ABSTRACT

### ACM Classification Keywords
H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous; See http://acm.org/about/class/1998/ for the full list of ACM classifiers. This section is required.

### Author Keywords
Authors' choice; of terms; separated; by semicolons; include commas, within terms only; required.

## INTRODUCTION
Process from mouse input to touch and gaze

### Gaze
- Reasons for gaze input
  - Primary sensory organ
  - Very fast
  - No fatigue
  - "Why shouldn't I interact directly with a target, when I'm already look at it?"
- Selection techniques (also presenting example approaches)
  - Dwell Time
  - Blinking
- Problems with gaze
  - Technology
  - Not precise (eye jittery)
  - No muscle memory
  - Midas Touch problem
  - Time based Selection (Too early gaze change which unintentionally aborts selection)
  - Distraction (Eye is by nature a input organ, so it is also reacting on events in the peripheral vision)
  - Intention (Unintended starring at the screen, should not be recognized by the system as target selection)
- "What about Fitts' Law?"



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### Touch
- Pro
  - Direct input
  - Widespread & familiar input method
  - Well-known gestures
- Contra
  - Fat Finger problem for small targets or on small screens
  - Reachability (How to interact on distant screens? (attention sharing) and How to interact with a target which is not directly in front of me (e.g. on tabletops)?)
  - Speed (Is it faster than gaze?)

## COMBINING GAZE WITH OTHER MODALITIES
(Here we will present the different approaches/principles and cover the following topics)
- Transition from contras of mouse/touch/gaze only to gaze and touch
- Presenting different techniques
  - Different principles: 'Gaze selects, touch manipulates' , Cursor-Warping, Gaze-Shifting etc.
  - Applications for Gaze+Touch ( Interaction on distant displays/wall-sized displays, RST, Just speed up, FittâĂŹs Law)

## EVALUATION
- More precise comparison of different techniques (not only Gaze+Touch methods, but also comparison to touch-only, gaze-only,...)
  - Speed
  - Comfort
  - Accuracy
  - Mental demanding?
  - User satisfaction
  - ...
- Contra
  - Fat Finger problem for small targets or on small screens

- Reachability (How to interact on distant screens? (attention sharing) and How to interact with a target which is not directly in front of me (e.g. on tabletops)?)
- Speed (Is it faster than gaze?)

## CONCLUSION

## REFERENCES