CrossEd – Crossing interface text editor

Bibliography Review
Goals

- Verify that all the interactions in traditional interfaces currently performed through point-and-click, can be achieved using crossing.

- Find points where crossing interfaces are stronger than traditional interfaces, and how to exploit them.
Battle Plan

- Design, implementation and evaluation of a simple application (text editor) entirely based on crossing.
Crossing vs Point-and-click
Clicking - Fitt’s Law

Beyond Fitts’ Law: Models for Trajectory-Based HCI Tasks, Accot and Zhai, CHI’97

MT = a + b \log_2\left(\frac{D}{W} + 1\right)

\[ MT = a + b \log_2\left(\frac{D}{W} + 1\right) \]
The results demonstrated that there exists a logarithmic relationship between movement time and width of target in the goal passing task similar to the tapping task.
Steering
Crossing – more than doting the i’s

- How does crossing compare with pointing?
- What is the theoretical foundation of crossing?

More than dotting the i’s Foundations for crossing-based interfaces, Accot and Zhai, CHI’02
Empirical study

- **Target type:** pointing vs crossing
- **Constraint direction:** collinear vs orthogonal
- **Continuity:** continuous vs discrete

![Diagram showing different target types and constraint directions](image_url)
Results

- Crossing goals follows the Fitt’s law, with different constants.
- Crossing is less prone to error.
- "Goal crossing completion time was shorter or no longer than pointing performance under the same index of difficulty."
- “There are situations where user performance in goal-crossing tasks is superior to that of target-pointing tasks.”
Crossing-based widgets
Concluding Remarks

- Crossing is a new interaction paradigm worth of study.
- Experiments show that this interaction could be faster.
- It has some advantages over other paradigms like:
  - Composition of commands
  - Versatility
Our project

- Develop an application that shows how the interactions performed in a traditional click-and-point interface (a word editor) can be constructed using only crossing.

- Evaluate the performance of this interaction method over the traditional click-and-point.