RESEARCH SUMMARY

The following critique is for the paper: "Ninja Cursor: Using Multiple Cursors to Assist Target Acquisition on Large Screens" written by Masatomo and Takeo for their approach to improve the performance of target selection on large or multiple screens. Their objective which they have implemented using 'Ninja Cursors' is to increase the number of cursors on the screen which eliminates the need of modifying either target representation or cursor representation in order to speed up target selection.
So according to the Fitts's Law that states: "the time required to rapidly move to a target area is a function of the ratio between the distance to the target and the width of the target.", Masatomo and Takeo suggest reducing the distance to the target represented by D in Index of Difficulty (ID) by increasing the number of cursors on screen to select a particular target.
Based on the paper following are a few evaluation points.

GOOD EVALUATION

What I appreciated about their approach was whereas other approaches to improve performance of target acquisition was to modify the target representation or the cursor representation which virtually increased the W in Index of Difficulty(ID), Masatomo and Takeo went for decreasing the D i.e., distance from target in ID. Such techniques (increasing W) are not that effective when it comes to larger or multiple screens.
Masatomo and Takeo do not change the object representation but instead change the distance from the object to target.
In addition to this, the researchers well experimented their research with the regular users of WIMP (Windows, Icons, Menu, Pointers) interface and also looked out for the error rates where their Ninja-8 cursor would fail (in the high target density situation).

CRITICAL EVALUATION

In their paper Ninja Cursors, Masatomo and Takeo increase the number of cursors on screen where the object representation is not changed and the cursor representation is modified only to indicate which cursor on the screen is active. However, the drawback lies in the fact that extra action is needed to indicate desired cursor if the default cursor is not the one that the user intends to use. This slows down interaction between user and the interface.
The main purpose of reducing the distance is to improve performance for the user to use in an efficient way. Ironically, by increasing the number of cursors on screen, user interaction on the screen is decreased, as they have to look out for the active cursor every time they need to point to the target.
Also, for the drawback that would select multiple targets through multiple cursors, which was solved using waiting queue algorithm, it is not as user-friendly. Unless one of the cursors is not completely inside the target, the other cursors do not become active. This eliminates the possibility that what if the two cursors reach center of the two different targets at the same time. How will the algorithm decide which cursor to put in the active state and which in the inactive state?

QUESTIONS

The questions that can be arisen after reading the paper could be:

- The main aim of improving performance is the user-friendliness. Is that really achieved using ‘Ninja Cursors’?
- Every time a user is working on large / multiple screens, should she be looking out for each of the cursors where they are going, just to ensure they select the right target?

CONCLUSION

As good as their approach of reducing the measure of selecting target is, they fail to make it user interactive. Definitively, their aim of improving the performance of target acquision by reducing the distance of cursor from the target is well achieved through multiple cursors, yet it fails to really implement the basic purpose of eliminating user enforcement.