

Briefing Script

Accessible Pointing Approaches for Web Applications

Background

Web applications are important

In the last decade, software moved to the Web. We can now send emails, plan holidays, or do our banking, all in 'web applications' hosted in a browser. This type of software development became popular because it can be written once, yet work on many types of device (as well as other advantages).

Web applications are designed for the mouse

There exists a problem with these web applications: their interfaces are designed with the expectation that the user will be using a mouse, or similar pointing device (such as touch input).

Not everyone can use mice!

Many users cannot use mouse input; users with long-term disabilities, such as RSI (repetitive strain injuries) cannot necessarily click mice, nor make the fine motor movements required to click small targets. Some disabilities preclude even pen or touch input, such as limb loss or cerebral palsy.

Some people aren't 'allowed' mice!

There are contexts where the user, in spite of perfect health, is effectively 'disabled' by their device; for example, when browsing the web on a games console (i.e. Xbox) the user is denied mouse usage; they must point instead with the gamepad provided.

Typing could be the alternative

When mouse is not an input option, typing is a widely-available alternative. This does not necessarily imply 'typing on a keyboard'; a disabled user could type using speech-to-text. An Xbox user could type using the gamepad. So long as key presses are generated by the input device, it can behave like a keyboard, but be purpose-built for the domain (i.e. accessibility hardware for the disabled, or the supported controller for a games console).

We need a good way to point via typing

Provided a suitable mechanism exists for performing mouse tasks via typing, then we can navigate websites without a mouse, even if one is expected.

Project Aim

We have created a novel keyboard pointing approach, ChibiPoint (chibi means 'pipsqueak').

It is to be contrasted with the existing keyboard pointing mechanism in web browsers, 'tabbing' navigation (that is, pressing the 'tab' key to focus the button that the user wants to point at).

User Study

The aim of this study is to compare how these two systems (ChibiPoint, and 'tabbing navigation') perform at pointing tasks on web pages. ChibiPoint itself will be tested in two modes (to determine the difference made by one of its features), so in total three systems will be under test.

You will be asked to:

- Fill in a preliminary questionnaire (mostly disclosing proficiency in areas relevant to this study).
- Read provided instructions for how to navigate webpages using the 3 systems under test.
- Navigate some websites using each of the 3 systems under test. A random order will be assigned.
- Fill in another questionnaire describing your preference amongst the systems you tested.

It must be emphasised that this study is testing the performance of the system, not of the user. You are not required nor expected to be an expert of any of the systems under test.

This study aims for a fair comparison of the merits of all three systems; there is no onus (implied or otherwise) on the participants to try to generate a particular result.

Usage context

The system is to be used in the context of being denied mouse usage.

Here is a scenario to imagine, should it help:

You have been working very hard this month creating a yearbook for your classmates' graduation. The software has no copy-paste feature, so you have had to make every page from scratch. This is a very repetitive task, and there are no keyboard shortcuts, so you have been using the mouse a lot. The layouts all have to look pixel-perfect, so you have to make lots of fine movements to get everything in the right place. There was never much time to do this. But you worked fast, and never stopped to take a break.

Now it's printed, and it looks great. But it took a toll on your hands. Your tendons have swollen, your grip strength is reduced, and it hurts to pinch or squeeze. In particular you can't click a mouse any more, although you can still curl your fingers enough to type slowly. Of course you still want to do your favourite things on the Web, like shopping. So you will do this without a mouse, and try not to hurt yourself typing. You do not mind spending longer doing things, but you really want to type as few keys as possible, to avoid exerting yourself.

Do not be concerned by this fate; with enough rest, you will recover in a few weeks. Additionally, early indications have it that your yearbook has been received well.

This scenario is provided simply to make the problem relatable. You are not asked to act like this persona. It is an explanation of the reason for the constraints.

Any mouse will be unplugged from the computer for the duration of your test, to restrict your input options to those of the disabled user.

Accountability

All data given will be treated confidentially, and stored without any identifying characteristics. You will be asked to consent to your data being used anonymously and are reminded that you may decline any task. You may also leave or take a break whenever one is required.

The researcher will give you a verbal briefing at the start of the study to summarise the above. Please feel free to ask questions at any point during the study, or contact either the researcher or project supervisor in the future.

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If you are unable to contact either of the above, please direct queries through the Department of Computer Science, University of Bath.

Permission

Please indicate that you have read and understood this briefing, and that you agree to participate in the study, by signing here.

Signature:

Name:

Your identity will be used only to record that permission was granted, and is not tied to the data you provide.