Tuning SDAZ to Address Overshooting and Course-correction Problems

> **Final Presentation** Thomas Dang, dqluan@gmail.com

Recap

SDAZ: Speed Dependent Automatic Zooming Control Pan and Zoom with only 1 form of input, and 2 degrees of freedom

User tends to overshoot targets and can't correct very well

=> Two Step Automatic Zooming (TSAZ)

Changes to Project Milestones
Can't load satellite map data
⇒ Switch to a very large document instead
⇒ Decrease the screen size to create an analog to the 2D map navigation task

2. On track to finish the final report on Dec 16

A screen shot of the demo

Zoomed-in

LWJGL window

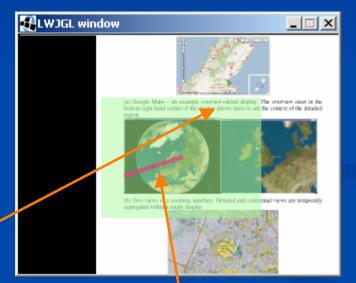
A Review of Overview+Detail, Ze Focus+Context Interfaces

ANDY COCKBURN^{*}, AMY KARLSON[†], BENJAMIN B.

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Hold left mouse button and scroll for AZ



Highlighted Focus Area indicates altitude

Mouse Displacement

The Intention of Zooming Out

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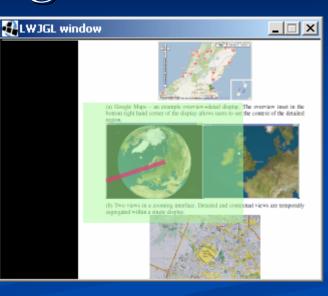
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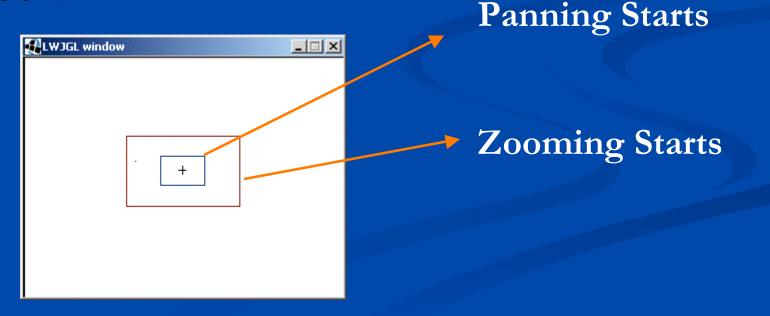


LWJGL window _ 🗆 🗙 A Review of Overview+Detail, Zooming, and Focus+Context Interfaces ANDY COCKBURN', AMY KARLSON⁴, BENJAMIN B. BEDERSON⁴ There are many interface schemes that above same to work at, and more between, focused and computerat viewnew any one of memory memory and allow any to ware at an other brokes, boostal and constants of a data set. We prove and charges the fore scheme control in the briteria mechanisms and to expand the set of the scheme states of the scheme states and the scheme brokes and there is a scheme scheme. A data scheme s. or decased Te Integration and Subject Description: D.2.2 Design Twols and Technics General Terme Human Factors Additional Key Words and Phrases. Infer preview-idetail, storenable user interfaces. Esbey 1. INTRODUCTION In most computer applications, users need to interact whe more information and with more interface components than can be conveniently displayed at one time on a single screen. This need is dictated by pragmatic, technological and human factors. The praematic issues concern form-factors such as the size, weight, and fashion of displays that are used for varied tasks in diverse locations, as well as the cost of construction. Technological limitations constrain the ability of displays to match the breadth and acuity

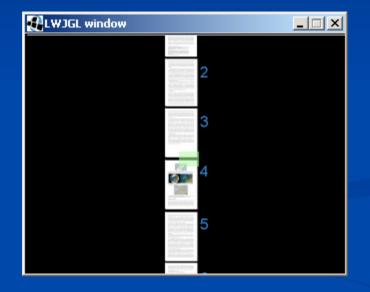
of human vision. Humans, for instance, can see through a visual angle of approximately 200%/20% (without turning the eyes or head), while typical computer displays extend Zoom-level no longer changes during course & speed adjustments

No Intention of Zooming

- 1. Like SDAZ, small displacement is ignored for zooming purposes
- 2. Unlike SDAZ, small displacement can still cause panning, only big displacement causes a zoom



The Calmness Before Zooming In



There is no displacement bar, the mouse button isn't hold down... but the user can rest

Speed-independent Auto Zoom-in

- 1. From zoomed-out state, press and hold the mouse button again will start zoom-in
- 2. Zoom-in speed independent from mouse speed
- 3. Follow the time guideline of 0.8-1s => 1s
- 4. Zoom-in speed not constant but follow animation convention

Slow-Fast-Slow

Future Work

- Improve the Usability Testing capability of the demo (currently only allow recording time taking to finish an arbitrary task)
- 2. Run some Usability Test
- 3. Overcome hurdles in the cartography application
- 4. Develop a touch screen analog of this mouse control scheme

References

- o SDAZ Igarashi and Hinckley (2000)
- 3D Point of Interest Mackinlay, Card, and Robertson (1990)
- Depth Modulated Flying Ware, and Fleet (1997)
- Bi-manual Zoom/Pan Bourgeois, and Guiard (2002)
- OrthoZoom Scroller Appert, and Fekete (2006)
- Around the World In Seconds With SDAZ Cockburn, Looser, and Savage (2003)
- Cognitive Cost of Visual Comparison Plumblee
 &Ware 2006



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