CPSC 533C: Interaction

by
Jordan Lee
08 Mar 04

Papers Reviewed


High Interaction Graphics

- Interactivity allows
  - Clarity

High Interaction Graphics

- Interactivity allows
  - Clarity,
  - Robustness

Clarity Example

Interactive vs. Static

Robustness Example

Interactive vs. Static

Interactive

Static

Interactive

Static
High Interaction Graphics

- Interactivity allows
  - Clarity
  - Robustness
  - Power
  - Possibility

Power Example

Districts of the city of Dublin showing areas with high levels of average income.

High Interaction Graphics

- Interactive data types
  - Lists
    - Colour code selected items in other plots

Possibility Example

Multiple Views

High Interaction Graphics

- Interactive data types
  - Lists
    - Colour code selected items in other plots
  - Histograms
    - Colour portion of histogram selected
High Interaction Graphics

- Interactive data types
  - Lists
    - Colour code selected items in other plots
  - Histograms
    - Colour portion of histogram selected
  - Boxplots
    - Like histogram but shows more information in less space
    - Colour portion of boxplot selected

- Scatterplot matrices
  - Allow multi-dimensional variables
  - Select in one cell, highlight in all other cells of matrix

Critique

- Pros
  - Good reference paper for generating interactive data types
  - Well structured, easy to read and understand
Worlds within worlds

- Tool for financial visualization
  - Multidimensional analysis (7-space)
- Data glove
  - 16 DOF
  - Allows “grab” vs “steer”
- Stereoscopic glasses
  - Reduces 3D ambiguity
  - Aids positioning in 3D

Critique

- Pros
  - Good implementation details
Critique

Pros
- Good implementation details

Cons
- No user feedback
- No comparison to alternate or past methods
- No discussion of scalability or real-time manipulation

Two-handed Interactive...

- Two to navigate and investigate 3D space
  - by 3D scatterplots

Two-handed Interactive...

- Minimally-immersive interaction
- 3D magnetic trackers

Two-handed Interactive...

- Minimally-immersive interaction
- Non-dominant hand
Two-handed Interactive...

- Minimally-immersive interaction
- 3d magnetic trackers
  - Non-dominant hand
    - Manipulate position and orientation of the scene
    - Select drawing context from menus
  - Dominant hand
    - Select 3d volume subset
    - Pick glyphs to display information

Critique

- Pros
  - Described past iteration of software
  - Good efficiency analysis and breakdown of optimizations
  - Actual rendering benchmarks and limits

- Cons
  - Few implementation details