Outline

My History

Course Structure
The Geometry Center

1991–1995 Technical Staff

The National Science and Technology Center for Computation and Visualization of Geometric Structures

mathematical (geometry and topology) visualization
GC: General-purpose visualization

Geomview
- very flexible, several thousand users in many domains
- supports noneuclidean spaces, higher dimensions

www.geomview.org 2000–
GC: Visualization videos

explain advanced topology to general audience

Outside In

The Shape of Space

[Silvio Levy, Delle Maxwell, and Tamara Munzner. Outside In (Video, 22 minutes). AK Peters, 1994.]

[Tamara Munzner and Delle Maxwell. The Shape of Space (Video, 13 minutes). Key Curriculum Press, 2000.]
Thesis: Interactive Navigation of Large Graphs and Networks

1995–2000 PhD Stanford

H3

Planet Multicast

Constellation


[Munzner, Hoffman, Claffy, and Fenner 1996]

[Munzner, Guimbretiere, and Robertson 1999]
Microsoft Research
SGI: Site Manager

web site content management tool
· H3 view of site hyperlink structure
· shipped from Irix 6.2 on

[www.sgi.com/software/sitemgr.html]
Compaq Systems Research Center

2000–2002, Research Scientist
TreeJuxtaposer
  · visual comparison of large evolutionary trees

[Munzner, Guimbretiere, Zhang, Tasiran, and Zhou 2003]
[Slack, Munzner 2003]
Current Infovis Research

domains
  · evolutionary trees
  · genomic sequences
  · transaction logs
  · environmental sustainability
  · power grid control
  · computer security

techniques
  · accordion drawing
  · multidimensional scaling
  · scalable graph drawing

InfoVis Symposium organization
  · Program Co-Chair 2003, 2004
  · Posters Co-Chair 2001, 2002
Course Structure

first part
  - professor lectures
  - all do core readings

second part
  - student presentations
  - presenter does topic readings

requirements
  - project: 50%
  - presentation: 25%
  - small assignment: 5%
  - class participation: 20%
Projects

choice 1: programming
  - like last year
  - I will only consider supervising students who do programming projects

choice 2: analysis
  - use existing tools on dataset
  - detailed domain survey
  - suitable for non-CS students

stages
  - meeting with me in person
  - proposal Nov 5
  - update presentations Nov 17,22
  - final report/present Dec 15
Presentations

second half of class

sign up by Oct 19

material

· 2 papers from my suggestions
· 1 paper found on your own

talk

· slides required
· critical points of papers
· comparison and critique
· not just outline!
Participation

10%: discussions in class
   · both lectures and student presentations

10%: 5 questions on required readings
   · due at beginning of class

   · if you can't attend: email required *before* class
Required Books

Ware
Information Visualization: Perception for Design
  · 2nd edition

Tufte
Envisioning Information
Reserve Books

Information Visualization: Perception for Design, Colin Ware


Readings in Information Visualization: Using Vision To Think; Card, Mackinlay, and Shneiderman, eds; Morgan Kaufmann 1999.

The Visualization Toolkit, 2nd edition; Schroeder, Martin and Lorensen; Prentice Hall 1998
Assignment 1

find and critique two images
  · one good visualization
  · one bad visualization

make web page, send me URL by noon Wed
  · pictures, two paragraphs for each
  · first par: story
  · second par: specific critique
    accessability
    clarity
    accuracy
    other important design criteria

be prepared to discuss for 3–4 minutes in class
Assignment 1

sources

· textbook
· journal
  - Journal of Applied Optics, ...
· science magazine
  - Nature, Science, Scientific American, ...
· news magazine or newspaper
  - Newsweek, Economist, NY Times, USA Today, ...

domains

· mathematics
· physical sciences
  - astronomy, physics, chemistry, ...
· biological sciences
  - ecology, medicine, bioinformatics, ...
· social sciences
  - economics, crime statistics, ...
Lecture Topics
Design Studies
Evaluation

Guest Lecturer: Melanie Tory
### Frameworks/Models

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Depth/Occlusion
High Dimensionality
Interaction
Navigation/Zooming
Focus + Context
Graphs/Trees
Scientific Visualization

Guest Lecturer: Melanie Tory
Course Home Page

permanent URL
· www.cs.ubc.ca/~tmm/courses/cpsc533c-04-fall

shortcut
· www.cs.ubc.ca/~tmm/courses/533

reload frequently, updates common!