Home | **Syllabus** | **Bibliography** | **Assignments** | **Instructor** | **TA** | **Related courses** | **Resources** | **Fall '12** | **Swiki**

CS 7450 - Information Visualization

Instructor: John Stasko
Fall 2013
Mon,Wed 3:00 - 4:30 pm
Whitaker Bldg. room 1103

Information visualization is a research area that focuses on the use of visualization techniques to help people understand and analyze data. While fields such as scientific visualization involve the presention of data that has some physical or geometric correspondence, information visualization focuses on abstract data without such correspondences such as symbolic, tabular, networked, hierarchical, or textual information sources.

The objectives of the course are

- Learn the principles involved in information visualization
- Learn about the variety of existing techniques and systems in information visualization
- Develop skills in critiquing different visualization techniques as applied to particular tasks
- Learn how to evaluate visualization systems
- Gain a background that will aid the design of new, innovative visualizations

The course will follow a lecture/seminar style with much discussion of assigned readings, as well as viewing of videos and hands-on experience with research and commercial information visualization tools.

We will be reading recent research papers about the different course topics. In addition, we will be using one book for the course: *Now You See It* by Stephen Few, Analytics Press 2009. Also highly recommended is *Envisioning Information* by Edward Tufte, Graphics Press 1990.

Students from a variety of disciplines are invited to take the class, but some prior background in human-computer interaction will be helpful. Programming experience is not required but will be useful.

Course Topics

Week	Dates	Topic	Topic	HW
1	Aug 19, 21	Introduction	InfoVis overview	HW 1
2	Aug 26, 28	Visual perception	Value/Benefits of visualization	
3	Sep 2, 4	No Class -- Labor Day	Multivariate data & table/graph design	
4	Sep 9, 11	Few's design guidance	Multivariate visual representations 1	
5	Sep 16, 18	Multivariate visual representations 2	Tasks and analysis	
6	Sep 23, 25	InfoVis systems & toolkits	Commercial systems demos	
7	Sep 30, Oct 2	Storytelling	Tufte's design principles	
8	Oct 7, 9	Poster session	Casual InfoVis	
9	Oct 14, 16	No Class - Fall break	No Class - VIS Conference	
10	Oct 21, 23	Graphs and networks 1	Graphs and networks 2	
11	Oct 28, 30	Hierarchies & trees 1	Hierarchies & trees 2	
12	Nov 4, 6	Interaction	Overview & detail	
13	Nov 11, 13	Text & documents 1	Text & documents 2	
14	Nov 18, 20	Visual analytics 1	Visual analytics 2	
15	Nov 25, 27	Time series data	Project work day	
16	Dec 2, 4	Evaluation	Review	

Grade Basis and Assignments

Grading will be based on class participation, short homeworks, assignments involving use and analysis of some information visualization tools, and a semester project. The weight of each assignment can be found on the assignments page.

Summary of weight for course assignments:

Component	Weight
Class participation	5%
HW Assignments	35%
Semester project	40%
Final exam	20%

Class Participation

It is expected that students will come to class, be prepared by doing the readings, and will pay attention and participate in discussions. Doing all three regularly will earn full credit. If you want to surf the internet on your laptop in class, take another course.

Homework Assignments

HW 1 - Data Exploration and Analysis (3%)

Project

Description - Capstone term project

Late Turn-in: - For each class period late, 25% of the total grade will be deducted from an assignment's score.