

HCDE 548 Advanced Topics in Information Visualization

Winter 2019

TTh 1:30-3:20 Sieg 226

Class website: <http://faculty.washington.edu/aragon/classes/hcde548/w19/>

Class discussion board: TBD

This seminar class will focus on discussion of current infovis research topics and will include hands-on design exercises and critiques. Each session will involve discussion of recent papers on topics related to information visualization, text visualization or visual analytics. Topics to be covered may include: appropriate allocation of visual attributes to data variables, designing with color and luminance contrast, the psychology of human vision and perception, visual analytics, interaction, storytelling, text visualization, text visual analytics, big data visualization, uncertainty visualization, network visualization, cartographic visualization, distance cartograms, animation and time series visualization, and class preferences. Students are encouraged to bring in ongoing research.

The final report will consist of a paper on a particular information visualization topic. This report may be an iteration of an in-class discussion or may relate to the student's existing research goals. Alternatively, the student may create an interactive information visualization on a topic of their choosing.

Report/project topics will be determined jointly by students and instructor. Examples of interactive visualization can be seen at <http://www.wefeelfine.org/> or <http://www.gapminder.org>. These are professional efforts and are intended to serve as aspirational. Class projects will focus on a single design goal and are intended to be much smaller in scope. Previous class projects can be seen at <http://faculty.washington.edu/aragon/classes/hcde548/w14/>.

Prerequisite: HCDE 411, 511, or background in information visualization.

Goals and Expectations

During a class session, students can expect:

- Two 50 minute sessions focused on seminar/lecture/discussion. This will consist of reading recent research publications on various topics, taking turns presenting the papers and leading class discussion, review of online paper discussion, developing thoughtful questions, and delving into research topics in depth.
- Occasionally, studio time or guest lectures from infovis experts. This may involve various hands-on exercises such as: sketching, creating paper prototypes (with post-its, translucent paper, markers, etc.) of common interactive visualization techniques such as brushing and linking, using ColorAid cards to facilitate describing color interactions, selecting and evaluating design goals, group critique, usability evaluations, use of laptops and online tools.

Learning Objectives

Learning objectives for the **seminar** portion consist of:

- Based on existing foundation of information visualization knowledge and skills, further develop knowledge of human visual system, visual perception, and attention.
- Understand selected advanced research topics in information visualization in depth.
- Develop skills in presenting information and leading discussions on advanced research topics.
- Acquire and enlarge capacity to inquire, discover, create, innovate, and challenge ideas, techniques, and knowledge in information visualization.

Learning objectives for the **studio** portion consist of:

- Develop visual and design imagination.
- Develop practical skills in selecting and evaluating design goals for interactive visualizations.
- Develop practical skills in designing, evaluating, and implementing interactive visualizations.
- Develop and practice specific skills in visual literacy such as sketching, paper prototyping, area estimation, critique, and usability evaluation to become independent, creative designers and researchers in information visualization.

Grading:

- Class participation (studio work, in-class discussion, paper write-ups and presentations) 80%
- Final report/project 20%

Participation and Extra Credit Policy:

- In a studio and small group discussion class, participation is critical. If you need to be absent from class, please notify instructor via e-mail in advance with the reason for your absence. You are expected to make up any work that you miss during an absence by presenting extra information from readings or writing up a summary of the class.