

Visualization Pedagogy in iSchools

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Abstract

iSchools have been offering visualization courses and developing programs in data science. The practice of visualization requires expertise in a diverse range of skills including design, data curation and coding, all of which leverage iSchool strengths. Thus, iSchools have a unique opportunity to develop curricula suited for data scientists that leverage iSchool strengths. During this half day, fishbowl style workshop, conference goers interested in visualization education at information schools will be invited to explore themes related to the inclusion of information and data visualization coursework in iSchool data science curricula. Workshop organizers represent several diverse disciplines with interest in applied visualization practices and collectively have a range of experiences using visualizations in research and teaching visualization in the classroom.

Keywords: curricula, data visualization, information visualization, data science

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1 Workshop Description

iSchools have been offering visualization courses and developing programs in data science. The practice of visualization requires expertise in a diverse range of skills including design, data curation and coding, all of which leverage iSchool strengths. iSchools have a unique opportunity to move beyond visualization tool building and develop curricula suited for data scientists that leverage iSchool strengths.

During this half day workshop, we will explore themes related to the inclusion of information and data visualization coursework in iSchool data science curricula. Workshop organizers represent several diverse disciplines with interest in applied visualization practices and collectively have a range of experiences using visualizations in research and teaching visualization in the classroom.

The workshop will use a fishbowl style format for interactions and discussion, providing an open forum for participants to share their experiences, seek the advice of colleagues, and articulate challenges and goals related to introducing visualization practices to both undergraduate and graduate iSchool students.

For this fishbowl discussion, a series of focusing questions will be offered, including:

- How are participants weighting technical skills, design concepts and cognitive understanding in class?
- What is the pedagogical relationship between visualization, design and data science?
- Can we identify best practices for training students in visualization techniques, tools and principles?
- How can we build connections between visualization education and other iSchool topics such as information literacy, data curation, access, information seeking and use, security, and privacy?
- Do participants have or envision multiple offerings (e.g. introduction and advanced)?
- How are we training and/or finding qualified instructors?
- What visualization skills and tools are most valued by employers of our data science students? What jobs might become available to our students with increased visualization skills?

Benefits of this half day workshop for the iSchool community include:

- Identification of members of the iSchool community with an interest in visualization
- Opportunity to explore a range of perspectives on the role of visualization education and research within the iSchool context
- Practical support for new and growing information and data visualization programs
- Forum for sharing best practices for teaching information and data visualization in iSchools

Anticipated outcomes include, but are not limited to:

- Identification of a network of iSchool researchers, instructors and administrators with an interest in information and data visualization
- Creation of an informal working group to address opportunities and challenges related to supporting visualization coursework in iSchool curricula
- Plans for conducting outreach to IEEE visualization communities, including identifying a subgroup of iSchool community members interested in developing a workshop proposal for the IEEE VAST (Visual Analytics Science and Technology) conference in order to introduce information science perspectives to the visual analytics community (and vice versa).
- Plans for developing future conference workshops at venues such as the iConference, ASIST, CSCW and CHI on topics such as Visualization for Data Exploration, Visual Research Methods, and Visualization as Design Practice
- A paper submission to the Journal of Education for Library and Information Science (JELIS)

2 Agenda and Topic Description

- 8:30 - 8:35 *Data and Information Visualization in the iSchools*
Introduction and kick off by Jeff Hemsley
- 8:35 - 8:50 *Beyond programming: Visual Analytics as a cognitive science*
Brian Fisher discusses Visual Analytics, the science of analytical reasoning facilitated by interactive visual interfaces, which takes a multidisciplinary approach to understand how visualization shapes human reasoning.
- 8:50 - 9:10: *Current challenges*
Organizers briefly introduce themselves and offer examples of the challenges and opportunities they face in teaching, or administering programs that offer, information visualization courses.
- 9:10 - 10:00 *Fish Bowl Discussion*
Jeff Hemsley will moderate an open forum group discussion on topics related to visualization curricula in the iSchools
- 10:00 – 10:30 *Coffee Break*
- 10:30 - 11:30 *Next Steps for Visualization in the iSchools*
Jaime Snyder will facilitate a *break-out groups planning session* for future events to support visualization education and research in the iSchools and to cultivate relationships between established visualization communities and the iSchools (e.g., an IEEE VAST workshop)
- 11:30 - 12:00 *Next Steps Group Reports*
Jaime Snyder and Jeff Hemsley will document the reports and work with other organizers to develop a paper submission to JELIS

3 Intended Audience

Educators, administrators and others interested in visualization education at information schools.

4 Preferred number of participants

Approximately 20 - 25

5 Special requests/equipment needs

Flexible setting that will facilitate our fish bowl format.

6 Organizers

Jeff Hemsley, Assistant Professor, teaches information visualization at Syracuse University

Jaime Snyder, Assistant Professor, teaches information visualization at University of Washington

Joseph Cottam, researches visualization toolkits at Indiana University

Brian Fisher, Associate Professor of Interactive Arts and Technology at Simon Fraser University, member of the IEEE Visualization Pioneers Society, VIS Exec Committee, and VAST Steering Committee.

Vicki Lemieux, Associate Professor at the University of British Columbia's iSchool, Senior Public Sector Specialist at the World Bank

Jeff Stanton, Professor and Senior Associate Dean in the School of Information Studies at Syracuse University, Certificate of Advanced Study (CAS) in Data Science lead

Yang Wang, Assistant Professor, teaches information visualization at Syracuse University