Data Analysis, Modeling and Visualization

Half Day Tutorial at Electronic Imaging 2005

Instructors

Katy Börner <katy@indiana.edu>
Assistant Professor of Information Science
Adjunct Assistant Professor of Informatics
Core Faculty of Cognitive Science
Research Affiliate of the Biocomplexity Institute
Indiana University, USA

Chaomei Chen <Chaomei.Chen@cis.drexel.edu>
College of Information Science and Technology
Drexel University
3141 Chestnut Street
Philadelphia PA 19104-2875
USA

Time & Place

Sunday, Jan 16th, 2005, 1:30p to 5:30p
San Jose Marriott attached to the San Jose Convention Center, San Jose, CA.

Description

This half day course introduces commonly used data analysis, modeling and visualization techniques. Algorithms available via the InfoVis Cyberinfrastructure at http://iv.slis.indiana.edu will be used for demonstration purposes. The course will also include walk-throughs of case studies of identifying the trends and significant changes in scientific literatures using CiteSpace.

Amongst other things, the course will cover:

- Visual Perception Principles
- Time Series Analysis
- Visualizing Tabular Data
- Visualizing Tree Data
- Semantic Data Analysis
- Network Modeling & Visualization
- Clustering Algorithms
- Interaction and Distortion Techniques

See also the existing learning modules available at http://iv.slis.indiana.edu/lm. Data sets from a variety of fields such as Crime, Social Science, Ecology, Finance, Health, Meteorology, Physics, Sales, Sports, etc. will be used to exemplify and contrast diverse algorithms.

Benefits

Upon taking this course, participants will be able to:

- Identify tasks that can be supported by data analysis and visualization.
- Describe and use major data analysis, modeling and visualization techniques.
- Select and combine appropriate techniques/systems for different application scenarios.
- Judge the potential and limitations of data analysis results and visualizations.

Intended Audience

Scientists, engineers, managers and product planners who need to manage, make sense of, and communicate large amounts of information. No prior knowledge or experience is assumed. Although not essential, some basic programming skills would help with full understanding of the basic algorithms and concepts.

Level

Introductory

Biographies

Dr. Katy Börner is assistant professor in the School of Library and Information Science, adjunct assistant professor of Informatics, core faculty in Cognitive Science and a research affiliate of the Biocomplexity Institute. She conducts research on the analysis and modeling of large scale data sets and designs visualizations that take into account principles of human vision and spatial cognition to improve information access, see her Lab's gallery at (http://ella.slis.indiana.edu/~katy/gallery). She has co-organized diverse international workshops, conferences and symposia on these topics and co-edited several special journal issues and a Springer book on 'Visual Interfaces to Digital Libraries'. She is the co-editor of the recent PNAS 101 (Suppl. 1) 2004 issue on 'Mapping Knowledge Domains'. Her research is funded by grants from the National Science Foundation, National Institutes of Health, SBC (formerly Ameritech), and SUN Microsystems.

Dr. Chaomei Chen is an associate professor in the College of Information Science and Technology at Drexel University. He is also a visiting professor at Brunel University, UK. He is the author of Mapping Scientific Frontiers: The Quest for Knowledge Visualization (Springer 2003) and Information Visualization: Beyond the Horizon (Springer 2004). Dr. Chen is the Editor in Chief of Information Visualization, a peer-reviewed international journal published quarterly by Palgrave-Macmillian.

Last Updated on November 2nd, 2004 by Caroline Courtney & Katy Börner