Call for Papers

Special Focus on
Big Data Visualization Techniques for Interactive Data Exploration

SCIENCE CHINA Information Sciences (SCIS) calls for papers for a Special Focus on Big Data Visualization Techniques for Interactive Data Exploration. In Big Data, data visualization converts variety of complex datasets into actionable knowledge. The enormous data collected from different intelligent sources like sensor networks and monitoring systems is critical and necessitates interactive techniques to explore the data. The conventional data analysis technique does not allow users to explore data interactively. Thus, the exploration of complex data can be feasible by integrating advanced interactive data visualization techniques. Generally, visual data exploration supports non-expert users who do not have the basic knowledge of data. It helps them by applying automated visual software to facilitate information perception and knowledge extraction. Also, big data visualization techniques used in a variety of modern systems provide users to identify trends, patterns, outliers, correlation, and sense-making activities. Advancement towards visual data exploration integrates humans in the data exploration process by applying their perceptual experiences to large data sets.

The interactive data exploration process needs massive data sets, efficient interaction, and personalization techniques. Big data involved for exploration include the heterogeneous nature of data, and raw data in the form of 2D/3D, text, graphs, and so on. Interconnected big data for large amount of data sources demands sophisticated visualization tools to explore the data. Nowadays, interactive visualization tools provide highly intuitive drag and drop interfaces, customization just by clicks, and streams real data for analysis. It also enables all sorts of interactive visualization techniques like standard 2D/3D visualization techniques, geometrically transformed display, icon-based display, pixel-based display, and stacked display. Data exploration also depends on interaction techniques, which allows multiple visualizations to provide more information to the end-user. Hence, big data visual exploration can generate interesting data patterns for details-on demand from different clusters, correlation, and exception. Furthermore, techniques such as ML, statistics, and simulation combined with visualization tools increase the speed of the data exploration process. The present challenge is that available visualization techniques do not fit to handle massive scale data exploration, which is in static or dynamic form. In order to overcome the problem, scalable interactive visualization techniques are used which handle large datasets, faster response, information abstraction, sampling, and summarization.

This special focus offers an effective platform for researchers to present different classification of big data visualization techniques, which helps to make interactive data exploration better.

The topics of interest for the special issue include, but not limited to, the following:

- Future of interactive visualizing and exploring biological data
- Perception and cognition through interactive data exploration and visualization
- Interactive big data visualization tools and techniques
- Interactive data exploration and analytics for healthcare
- Data science and visualization for exploring business intelligence
- Recent advances in interactive and visual data clustering
- Visualization, exploration & analytics techniques for high-dimensional and streaming data
- Integrating Interactive machine learning and data mining in big data visualization
- In-situ visual exploration and analytics of multivariate volume data
- Scalable interactive visual operations like zooming, panning, linking and brushing
- Novel interface and interaction paradigms for data visualization
- Interactive visualization for computer vision analysis

Submission

The papers should be edited in the SCIS template, and should be submitted online through the manuscript submission system of the SCIENCE CHINA Information Sciences. The submission website is: https://mc03.manuscriptcentral.com/scis. You should choose **Special Focus on Big Data Visualization Techniques for Interactive Data Exploration**. Information and guidelines on preparation of manuscripts are available on the journal website: http://scis.scichina.com or https://engine.scichina.com/publisher/scp/journal/SCIS?slug=news .

Important Dates

Submission deadline: Jan 31, 2021
Acceptance notification: May 31, 2021
Final manuscripts due: June 30, 2021
Publication: Sept 1, 2021

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