

Visual Analytics: Towards Effective Human-Machine Intelligence

We call for novel and high-quality submissions on visualization and visual analytics for a special issue of ACM Transactions on Intelligent Systems and Technology (ACM TIST). Visualization turns data into intuitive visual representations and allows people to quickly see, interact, and analyze the patterns in the data. As an old saying goes “a picture worth a thousand words”, visualization can significantly improve the abilities of people to understand and interpret the data and analysis results. Visual analytics is an emerging research area that evolves from visualization, which aims to support “analytical reasoning facilitated by interactive visual interfaces”. Visual analytics can enable human-machine intelligence that effectively integrates human knowledge and expertise into powerful data mining algorithms through highly interactive visualizations. Visualization and visual analytics have been used in many applications to tackle various important problems in the big data era, such as tackling urban issues like traffic jam and air pollution, making better diagnostic and treatment decisions, preventing threats and fraud in business, optimizing rescue efforts, forecasting severe weather conditions, and achieving situational awareness during crisis.

This special issue will introduce the readership to the latest innovations and provide a spotlight on emerging and promising research topics in visual analytics and visualization for highly effective human-machine intelligence. We invite high quality submissions aiming to enable human and machine to work a team to solve practical problems via intelligent visualization systems and technologies. Topics of interest include but not limited to:

Exploring Big Data using Visual Analytics

- Visual urban analytics
- Visual analytics of social media data
- Visual text analytics
- Visual analytics of healthcare data
- Visual analytics of multimedia data
- Visual analytics for bioinformatics
- Visual analytics of business data
- Visualization and visual analytics for humanities
- Visual analytics of user behavior data
- Visual analytics of engineering data
- Visual representations and interaction techniques for visual analytics
- Data management and knowledge representation for visual analytics
- Analytical reasoning and collaborative analytics through visualization
- Taxonomies and models

Understanding Human Factors in Interactive Machine Learning

- User studies for identifying the role of humans in interactive machine learning
- Evaluating and understanding the difficulties that users have with machine learning
- User studies of comparing interactive machine learning tools and systems
- Case studies of the use of a machine learning tool for solving important problems

Visualizing and Diagnosing Machine Learning

- Visual analytics and visualization for explaining machine learning models
- Visual analytics and visualization for diagnosing machine learning models
- Visual analytics and visualization for better analysis of deep learning

Submissions

Online Submission (available in July 1, 2017): <http://mc.manuscriptcentral.com/tist> (please select “Special Issue: Visual Analytics” as the manuscript type)

Details of the journal and manuscript preparation are available on the website: <http://tist.acm.org/>

Each paper will be peer-reviewed by at least three reviewers.

Important Dates

- Full Paper Submission Deadline: August 31, 2017
- Review Notification: November 31, 2017
- Final Manuscript: January 31, 2018
- Publication Date: 2018

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