CALL FOR PAPERS – IEEE Transactions on Intelligent Transportations Systems

Special Issue on Visual Analysis for ITS

Sensing technologies, social media and large-scale computing infrastructures have produced a variety of traffic and transportation data, e.g., human mobility, mobile trajectories, mobile phone calls, traffic, and geographical data. Despite the wealth of research on intelligent transportation systems, contemporary analytical tools are often inadequate in regards to handling the large volume, sparseness and heterogeneity of data, let alone in supporting interactive visual analysis for data-intensive applications. Consequently, how to connect the data management technologies, analytics models and the experience of domain experts is the key to developing effective analysis schemes for transportation data.

The goal of visual analysis for intelligent transportation systems (ITS) is to develop methods and tools that can help analysts understand and utilize traffic and transportation data in an inter-connected and relation-aware perspective. Such tools and methods must couple visual representation, querying and reasoning via interactive displays in order to help manage ITS demands of the future. By employing visual channels to represent datasets and transforming various types of data into appropriate visual components, visualization can enhance a user’s understanding and analysis. Then, by coupling these visual representations with interactive queries, analysts can investigate and directly access selected data points or features, discovering interesting patterns or events. By interactively investigating data, analysts can engage in visual reasoning which allows users to derive insights, e.g., it is desirable to show only the most relevant portions of a dataset while suggesting directions for potential exploration.

The special issue on “Visual Analysis for ITS” of IEEE Transactions on Intelligent Transportation Systems aims to address issues related to the representation, visual design, visual mapping, interaction, analysis and applications of multi-variate and time-varying data collected in traffic and transportation systems. We solicit papers describing frameworks, theories, approaches, and techniques from visualization, visual data mining and visual analysis for designing, building and managing intelligent transportation systems. The topics include, but are not limited to:

- Visual representations, visual design, visual query, visual interaction, visual reasoning, visual decision-making for ITS;
- Visualization theories and visual analysis models for ITS;
- Descriptive and predictive visual analytics for ITS, and
- Applications, Surveys, and Evaluation approaches of visual-assisted ITS.

Important Dates

The tentative schedule for the Special Issue is as follows:

- First submission deadline: **July 31th, 2016**.
- First revision submission deadline: November 31st 2016.
- Notification of final decision: March 31st 2016.
- Final manuscript (camera ready) submission deadline: **April 30th 2017**.
- Issue of Publication: **July 2017**.

Manuscripts must be submitted electronically at http://mc.manuscriptcentral.com/t-its

Guest Editors

Gennady Andrienko (gennady.andrienko@iais.fraunhofer.de), Fraunhofer IAIS, Germany and City University London, UK

Natalia Andrienko (natalia.andrienko@iais.fraunhofer.de), Fraunhofer IAIS, Germany and City University London, UK

Wei Chen (chenwei@cad.zju.edu.cn), Zhejiang University, CHINA

Ross Maciejewski (rmacieje@asu.edu), Arizona State University, USA

Ye Zhao (zhao@cs.kent.edu), Kent University, USA