

CALL FOR PAPERS

Special issue on

Augmenting Urban Brain with Visual and Social Intelligence IEEE Transactions on Computational Social Systems

Cities are complex systems that comprise physical infrastructure, cyber information, and social communities. Urban brain is conceptualized to shape the way a city runs in almost every aspect, from individuals' daily lives to governments' city management, such as urban planning and intelligent transportation systems. The achievements in sensing technologies, social media, and large-scale computing infrastructure, have made urban brain technically feasible, yet contemporary analytical tools are often inadequate. Conventional artificial intelligence methods leverage data-driven approaches to characterize complexities in cities, which are not amenable for significant challenges such as data heterogeneity and algorithm scalability. Integrating advanced analytics models with domain experts' knowledge is probably the key to developing effective analysis and decision-making schemes for urban brain.

Visual intelligence combines automatic analysis with interactive visualizations, and social intelligence manages complex social relations and environments. Both take advantages of human's cognition capabilities to facilitate human's understanding, reasoning and decision making process: visual intelligence utilizes human's visual perception to gain insights by mapping data into appropriate visual structures, coupled with efficient interactions; social intelligence not only provides understanding of how people perceive, but also instructs people to interact with social context. As such, visual and social intelligence play essential roles in developing efficient urban brain. Yet many challenges need to be addressed, such as designing intuitive interface for exploring multi-dimensional big urban data, incorporating visual communications to connect individuals, communities, as well as governments, and establishing trust and prevent rumors in social media, etc.

This special issue aims to bring together researchers from both visualization and social computing communities to push forward the R&D for urban brain by leveraging the most recent progress in visual and social intelligence. The topics include, but are not limited to:

- Visual analytics for big urban data
- Visualization of Cyber-Physical-Social systems
- Visual knowledge computing for urban brain
- Visual design and system development of urban brain

- Social computing for urban brain

Important Dates:

Submission Deadline: 31st May, 2018

Reviews Completed: 30th September, 2018

Expected Publication Date: 31st December, 2018

Submission:

Please submit your papers through the online system (<https://mc.manuscriptcentral.com/tcss>) and be sure to select the manuscript type “Special Issue on Augmenting Urban Brain with Visual and Social Intelligence.”

Guest Editors:

Prof. Wei Chen (Corresponding Editor), State Key Lab of CAD&CG, Zhejiang University, China.

Email: chenwei@cad.zju.edu.cn

Prof. Yisheng Lv, The State Key Laboratory for Management and Control of Complex Systems, Institute of Automation, Chinese Academy of Sciences; Qingdao Academy of Intelligent Industries, China.

Email: yisheng.lv@ia.ac.cn

Prof. Andreas Kerren, Department of Computer Science, Linnaeus University, Sweden.

Email: andreas.kerren@lnu.se

Dr. Jing Xia, Ali-cloud, Alibaba, China.

Email: jing.xia@alibaba-inc.com

Dr. Wei Zeng, Future Cities Laboratory, ETH Zurich, Switzerland.

Email: zeng@arch.ethz.ch