Special Issue on Geographic Data Science

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Data science is an emerging area concerned with extracting insight from large collections of data. Methods that scale to big data in terms of volume, variety, velocity, and veracity are of particular interest in data science. Interactive visual interfaces and visual analytics approaches play an essential role in data science as they support the human cognitive process by allowing analysts to look at a subject from different perspectives and at different scales and levels of detail, link diverse pieces of information, and direct and control the work of computational analytical tools.

Advances in sensor and positioning technologies in recent years have facilitated an unprecedented growth of spatially referenced data, thus leading to massive volumes of data containing complex, yet implicit spatial, temporal, and semantic interrelations that are waiting to be uncovered. Although such data is often collected for the extraction of geographic information and knowledge, exciting secondary uses and innovative applications of geographic knowledge discovery are now possible. Geographic analysis has traditionally relied on the use of visual (mostly cartographic) representations. Yet, the volume, variety, and dynamic aspects of this new data pose new challenges for geographic visualization and visual geoanalytics.

For this special issue, we are soliciting original contributions that combine algorithmic and visual approaches that make sense of large volumes of various types of spatial and spatiotemporal data. Topics of interest include but are not limited to the following:

- Combining interactive geographic visualizations with computational analysis techniques from areas such as spatial statistics or data mining
- Visual analytics support for spatial modeling, planning, forecasting, and decision making
- Modeling uncertainty in spatial data and supporting uncertainty-aware analytical reasoning
- Visual explorations and analysis of spatial (such as simulation) models and their parameter spaces
- Visual representation and communication of knowledge and models extracted through geographic analysis
- Cognitive and perceptual aspects of visual geoanalytics
- Infrastructures and architectures of visual analytics systems and services

Guest Editors
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Submission Guidelines
Nondepartment articles submitted to IEEE CG&A should not exceed 8,000 words, including the main text, abstract, keywords, bibliography, biographies, and table text, where a page is approximately 800 words. Articles should include no more than 10 figures or images. Each 1/4 page figure, image, and table counts for approx. 200 words. Note that all tables, images, and illustrations must be appropriately scaled and legible; larger elements should be accounted for accordingly with respect to word count. Please limit the number of references to the most relevant and ensure to delineate your work from relevant past articles in CG&A. Furthermore, avoid an excessive number of references to published work that might only be marginally relevant. Consider instead providing such pertinent background material in sidebars for non-expert readers. Visit the CG&A style and length guidelines at www.computer.org/web/peer-review/magazines.

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