Panel Session:

5252 Big Spatiotemporal (BiST) Data Analytics - II

is scheduled on Saturday, 4/25/2015, from 10:00 AM - 11:40 AM in Stetson BC, Hyatt, West Tower, Purple Level

Sponsorship(s):
Geographic Information Science and Systems Specialty Group
Spatial Analysis and Modeling Specialty Group
Remote Sensing Specialty Group

Organizer(s):
David Wong - University of Hong Kong
Shih-Lung Shaw - University of Tennessee

Chair(s):
Shih-Lung Shaw - University of Tennessee

Introduction:
Shih-Lung Shaw - University of Tennessee

Panelist(s):
Kathleen Stewart - University of Iowa
Daniel A. Griffith - U. of Texas at Dallas
Nina Lam - Louisiana State University
Shaowen Wang - University of Illinois at Urbana-Champaign
Hui Lin - The Chinese University of Hong Kong
Ed Parsons - Google

Session Description: The number of geographical studies using Big Spatiotemporal (BiST) data, including those data generated from VGI and social media as well as a wide range data collected by vendors, service providers and various sensors (e.g., shopping data, phone data, credit card data, smartcard data, traffic monitoring data, CCTV data), has mushroomed in the past several years. A major dimension of these BiST data is their heterogeneity (e.g., pictures with texts and numerical values). Associated with the heterogeneity is the highly unstructured organization. Geographers have been accustomed to and trained quite adequately to handle and analyze traditional geospatial data, which are often organized systematically according to the GIS feature-attribute model. Such structure can feed data to statistical programs conveniently, and many standard tools, both statistical and spatial analytical (in GIS), are available to analyze these data. However, the heterogeneous nature and unstructured formats of most BiST data seem to nullify the utility of these standard analytical frameworks and tools, especially with the consideration of temporal dimension. These characteristics put these data out of reach to most "typical geographers", challenging the capabilities of these scientists to process and analyze these complex but potentially useful data, and the adequacy of current education-training programs in producing competent spatial scientists.

Therefore, the purposes of these panels are to draw on collective wisdom and share insights about several aspects related to the analytics of BiST data:

- What are the fundamental differences between traditional spatial data analysis and big spatiotemporal data analytics? Why are traditional spatial analysis methods not sufficient to address BiST data?

- Despite the complicated structure and heterogeneous nature of BiST data, can we develop some general frameworks or procedures to process and organize them?

- Given the spatiotemporal nature of these data, can we develop some general or a set of frameworks and tools, particularly spatiotemporal tools, to analyze and visualize these data?

- While some of these ideas may involve skills not typically required for geographers or students, how should we equip the current and next generations of geographers/spatial scientists to make best use of BiST data?

New Query