TRB Workshop 124
Workshop on Big Data Informatics: Innovations in Mining Structured and Unstructured Information for Mobility Decision-Making

Sunday, January 13, 2013 9:00AM - 12:00PM Hilton, Jefferson West

Organizers:
Piyushimita Thakuriah (Vonu) (vonu-pt@uic.edu)
Harvey J. Miller (harvey.miller@geog.utah.edu)

Sponsoring committee:
ABJ30: Urban Transportation Data and Information Systems
Co-sponsoring committees:
ABJ60: Geographic Information Science and Applications
ABJ95: Visualization in Transportation

	Presenter	**Affiliation**
9:00am	**Introduction:** Vonu	University of Glasgow, UK
9:15am - 10:30 am	**Panel 1: Big data collection and analysis** **Chair:** Walt Fehr, USDOT	
	Satish V. Ukkusuri	Purdue University
	Tingting Wang	University of Washington
	Hong Yang	Rutgers
	Timothy Michalowski	Abt SRBI, Inc.
	S.A. Meijer (Sebastiaan)	KTH
	Jan-Mou Li	ORNL
10:45am - 12:00pm	**Panel 2: Big data tools and application development** **Chair** - Glenn Geers, NICTA	
	Ben Stabler	Parsons Brinckerhoff
	James Marca	UC-Irvine
	Nicolas Saunier	École Polytechnique de Montréal
	Sisinnio Concas	U South Florida
	Wenjing Pu	Metropolitan Washington Council of Governments
	Vincent Dionne	École Polytechnique de Montréal

Rules: Each presenter has 5 minutes to summarize a position, research challenges, or both. Seed questions for each panel are listed below. The remainder of the panel time will be free-form, open discussion among panel members and the audience.

Questions for Panel 1:

1. What are some examples of key transportation benefits and insights that have been derived to date from Big Data that would otherwise not have been possible? Which areas within transportation research are most likely to benefit

in the early stages and how? (To each panel member): Identify the top 3 research questions that you think Big Data will help you address that traditional data approaches cannot help you with.

2. McKinsey Global has heralded Big Data as the "The next frontier for innovation, competition, and productivity". What are the major opportunities in the future for Big Data in transportation? OR What are some transformative research areas/questions that will be enabled by Big Data in the future? What types of transformative analysis will be enabled?
3. What are the major technical challenges and limitations facing the use of Big Data in transportation analysis? What are the most-needed solutions to address these challenges? What are some synergistic computational, data management and location-aware technology developments that ought to be leveraged for improved Big Data analytics in transportation?
4. What are the major institutional challenges and limitations (legal, data ownership, workforce development and training, digital divide, security, lack of open data etc) facing the use of Big Data in transportation analysis? What are the most-needed solutions to address these challenges?
5. What are some key technical and management strategies (for transportation agencies, firms, Location-Based Services and other organizations) to adopt the use of Big Data to obtain maximum benefit? What elements of "best practices" would be helpful for such organizations to have case studies on?

Questions for Panel 2:

1. What are the greatest technical and conceptual challenges to understanding the linkages between individual behavior and collective dynamics in transportation systems? Can we shape these dynamics to guide transportation systems and cities to better collective outcomes? How?
2. What will be the "killer app" or game-changing tool/service in 2020?
3. Data are coming at us not only at higher volumes but also higher velocities. How do we close the bottleneck (time lag) between data input to decision so we can act before the data are stale?
4. Will Big Data lead to better decisions? Will it generate greater consensus or division? Will we learn to share?
5. How should transportation agencies, the public and private sectors and citizens prepare for the era of Big Transportation Data? How will development, deployment and management of these technologies and systems occur in the coming age of austerity?
6. What types of software will be important to extract transportation intelligence from Big Data? How can existing software (pick one – traffic simulation, long-range planning software, GIS) be adapted – what extra capabilities, modules and tools will be needed to "retrofit" existing tools to support Big Data analysis?