IWGS 2016 Workshop Report
The 7th ACM SIGSPATIAL International Workshop on GeoStreaming
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The ACM SIGSPATIAL International Workshop on Geostreaming (IWGS) was held for the seventh time in conjunction with the 24th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACMGIS 2016). The workshop has been a successful event that attracted participants from both academia and industry. The workshop addressed topics that are at the intersection of data streaming and geospatial systems. The workshop fostered an environment where geospatial researchers can benefit from the advances in geosensing technologies and data streaming systems.

We are entering the era of "big data" thanks to the exponential growth and availability of structured and unstructured data, among which a large amount are real-time streaming data emitted from sensors, imagery and mobile devices. In addition to the temporal nature of stream data, various sources provide stream data that has geographical locations and/or spatial extents, such as geotagging twitter streams, mobile GPS location streams, spatial temporal image streams, and so on. On one hand, this amount of streamed data has been a major propeller to advance the state of the art in geographic information systems. On the other hand, the ability to process, mine, and analyze that massive amount of data in a timely manner prevented researchers from making full use of the incoming stream data. The geostreaming term refers to the ongoing effort in academia and industry to process, mine and analyze stream data with geographic and spatial information.

This workshop addresses the research communities in both stream processing and geographic information systems. It brings together experts in the field from academia, industry and research labs to discuss the lessons they have learned over the years, to demonstrate what they have achieved so far, and to plan for the future of geostreaming.

The workshop featured two keynotes. The first keynote was delivered by Roger Zimmermann from NUS, who reflected on the fascinating work at his research lab on fusion and analysis of data streams received from physical sensors and social media, discussing the the challenges in addressing this problem and corresponding solutions his team have developed. The second keynote was offered by Yu Zheng, a research manager at Microsoft Research China. He defined urban computing as the process of acquisition, integration, and analysis of big and heterogeneous data generated by a diversity of sources in cities to tackle urban challenges, e.g., air pollution, energy consumption and traffic congestion. Urban computing connects unobtrusive and ubiquitous sensing technologies, advanced data management and analytics models, and novel visualization methods, to create win-win-win solutions that improve urban environment, human life quality, and city operation systems. According to Zheng, this field is an inter-disciplinary field where computer science meets urban planning, transportation, economy, the environment, sociology, and energy, etc., in the context of urban spaces. In this talk, he

provided an overview of a framework for urban computing, and discussed its key challenges and methodologies from computer science perspective. He also presented a variety of urban computing applications, ranging from big data-driven environmental protection to transportation, from urban planning to urban economy. This keynote was very well attended and engaging.

The call for paper resulted in 11 submissions of very high quality research papers. A program committee of 6 members reviewed the submissions and as a result 10 papers were accepted given the time constraints of the workshop. On average, over 20 attendees were present at every session of the workshop, although in certain sessions the attendance exceeded 60. The topics presented in the workshop include but are not limited to: Moving Object Queries, Geostream Data Processing, Mining Geostreams, and Trajectory Analysis.