STORM: Spatio-Temporal Online Reasoning and Management of Large Spatio-Temporal Data

Robert Christensen¹, Lu Wang², Feifei Li¹, Ke Yi², Jun Tang¹, Natalee Villa¹

¹University of Utah {robertc, lifeifei, jtang, villa}@cs.utah.edu
²Hong Kong University of Science and Technology {luwang, yike}@cse.ust.hk

Motivation
- Geo-Spatial data is being collected on a massive scale.
- Approximate analysis is fast and often effective for this data.

Architecture of STORM

Data Connector | Query Interface
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Schema Discovery | Query Parser
Data Parser | Visualizer
Update Manager | Sampler

User Data (may have different formats, schemas, and storage engines)

STORM Interface

Strom Spatio-Temporal Online Reasoning and Management

Importing Data into STORM

A user can import their own spatio-temporal data set into STORM, allowing custom analytics of user data.

STORM can analyze the approximate trajectory of data. From the trajectory we can infer where to user lives, works, and attends school.

Spatio-Temporal Wordcloud

Short-text understanding estimator after a highly anomalous heavy snow storm in Atlanta.

Performance Considerations

Figure: query efficiency: vary k
Figure: query accuracy calculating avg altitude of a dataset.