

Future Insights: Harnessing AI and Social Media for Advanced Event and Epidemic Forecasting

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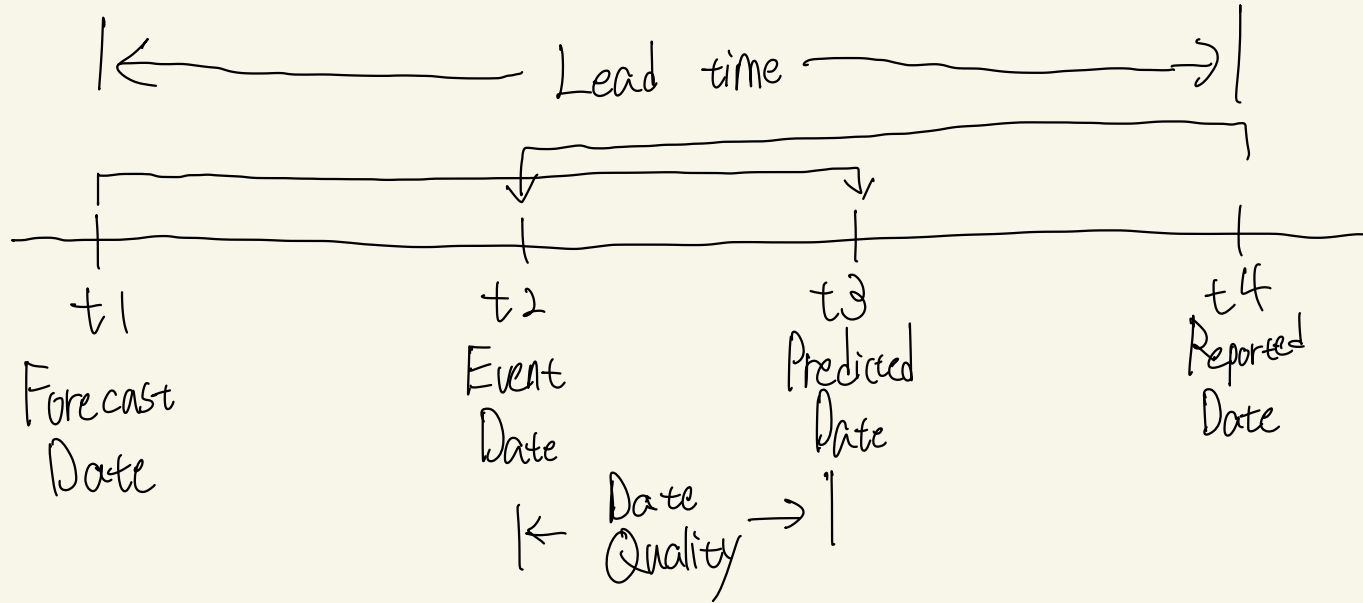
Forecasts automatically emailed for evaluation
without human-in-the-loop

Evaluation done independently of authors, by MITRE
Using a Gold Standard Report (GSR) of events

Metrics

1. Quality
2. Lead time
3. Recall
4. Precision
5. Probability

Lead time



6 Vs

Volume

Velocity

Variety

Veracity

Value

Visualization

Microblog is a noisy sensor

Retrieving relevant microblog texts is challenge!

Short-text format leads to informal language,

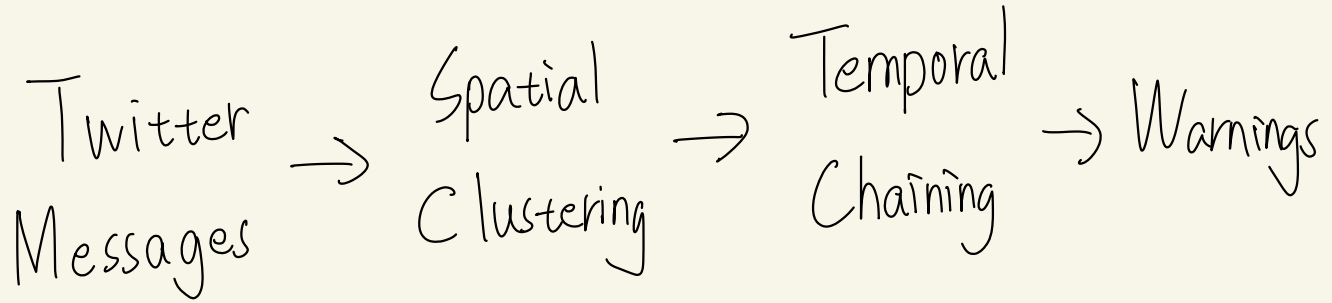
Microblogs are dynamic in nature

Content Filtering via Dynamic Query Expansion

We need: Unsupervised and adaptive solution

Our Approach: Dynamic Query Expansion

Data reduction helps!



Reduce model complexity

Multitask Learning for Spatiotemporal Event Forecasting

Task Overview

Input: tweets

Output: predicted spatiotemporal event under target topic

Model type: multitask learning

Challenge

insufficient tweets data for small location

Hard to jointly consider both the heterogeneity and
relatedness among different locations.