Script for the video

WELCOME.

The Earthquake Situational Analytics application includes active, interactive components that are able to work with dynamic, streaming data.

The main panel – panel A is a stream graph, showing the number of posts related to the selected categories in a time frame. The categories are defined as in panel A1. Each category is defined with a set of related keywords, in order to decide if a message belongs to a category or not. We built this taxonomy with an assumption that one message can belong to more than one category.

Selection “All” shows the number of total classified messages with all categories.

Selection “Event” includes sub-categories *Earthquake, Ground damages, Flooding, Aftershock* and *Fire*.

Likewise, Selection Resource includes Water, Energy, Medical, Shelter, Transportation and Food. We provide an “Other” category, which includes number of posts of “Rumble” – an app for people in St. Himark to report about the disaster, along with “Other Posts” – the posts that don’t have any of these above-mentioned keywords. The time frame is chosen by a sliding window

The taxonomy applied for the whole system:

// the feature overview

The analytics application includes active, interactive components that are able to work with dynamic, streaming data. The main control board (A) is built as a stream graph. Each stream represents the number of posts classified as the selected categories from selection panel (A1). Each of these categories come with a set of keywords to decide if a message belongs to a category or not. The categories are defined based on 1) Types of event related to the earthquake and 2) Types of resources that needed for the situation. We built the following taxonomy with an assumption that one message can belong to more than one category, e.g., a message can indicate that there are needs for both water and food.

1. Event, includes:

1.1. Earthquake: seismic, earthquake, quake, quaking, shake, shaking, wobble, wobbling, quiver, epicenter

1.2. Grounds (ground damage): mudslide, rupture, landslides, liquefaction

1.3. Flooding: tsunami, flood

1.4. Aftershock: aftershock

1.5. Fire: fire, smoke

2. Resources:

2.1. Water: sewage, water, discharge, drain, irrigation, sewer, reservoir”

2.2. Energy: blackout, electric, candle, energy, flashlight, fuel, gas, generator, nuclear, power, radiant, radiation, radio rays, valve

2.3. Medical: ambulance, blood, bruise, dehydrate, emergency, escape, evacuate, evacuating, evacuation, fatal, first aid, fracture, hurt, illness, infection, injure, kill, lump, medic, red cross, rescue, rescuing, respiratory, suffering, swollen, urgent, victim, wound

2.4. Shelter: shelter, housing, building, collapse, construction, house

2.5. Transportation: bridge, traffic, congestion, avalanche, highway, lane, logistic, jammed, route, street, transportation

2.6 Food: food

Besides, we have other options for broader view:

- All – total classified messages with all categories.

- Other:

+ Rumble – the app for people to report about the disaster

+ Other posts: posts that don’t have any of these above-mentioned keywords.

A sliding window across the stream graph is provided for specific selection of time frame at a particular timestamp. This time frame can be expanded from 1 hour to 30 hours by user. The vertical axis shows the number of posts, while the horizontal axis shows the timeline.

The other four components are depicted as panels B to E in Figure 1. For each change in main panel A – whether it is choosing another time frame, timestamp or category selection, all other 4 panels are updated according to A.

To demonstrate the evolution of a topic, panel B provides a WordStream, showcasing the content of corresponding messages for the chosen time frame and the chosen categories. The WordStream consists of two topics: the keywords within content of messages and location of the message. Thickness of the stream is proportional to number of posts – the global trend. Users can also explore the local trend of an individual term and detail of messages.

Panel C is a map of St. Himark, in which the color of each neighborhood indicates the number of posts for the chosen time frame and the chosen categories. User can use this map for highlighting corresponding terms in the WordStream and vice versa.

Panel D is a network of user interaction for the chosen time frame and the chosen categories. The network demonstrates the connection between users, through the account mentioning in content of messages. Via this network, we can spot which one is the account that has important role in the community.

Panel E is an account list for ranking content creators. This chart shows the accounts the write the largest number of posts for the chosen time frame and the chosen categories. From this chart, users can see who write many posts but not connected to the community, exploring these points can help to detect irrelevant accounts.

Question 1: **1- Using visual analytics, characterize conditions across the city and recommend how resources should be allocated at 5 hours and 30 hours after the earthquake. Include evidence from the data to support these recommendations. Consider how to allocate resources such as road crews, sewer repair crews, power, and rescue teams. Limit your response to 1000 words and 12 images.**

Selection “Earthquake” gives