Streaming geocoding of incidents based on information from social networks

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Introduction

• Social networks can be helpful for collecting incident data by processing posts which contain information about place and type of happened event.

• Users of social networks regularly report and react to emergencies - accidents, incidents, communal problems.

• Analysis of such information allows collecting statistics on problem areas or urgently taking measures to eliminate the current situation.

• In order for collected data to be useful, the geocoding process must occur instantaneously as new posts appear.
Problem

• Users of social networks not always use modern maps to mark an incident on a map, such as road closures, utility accidents, traffic accidents etc.

• Text reports usually contain only a part of an address, often just a description of a place.

• Usefulness of such reports is highest when they have just appeared as the necessary actions should be taken as quickly as possible.
Goal

- Collect posts about various types of incidents.
- Predict full addresses from reported parts.
- Mark reported incidents on a map.
- Do it at the moment the report appears.
Solution

• Define sources of data

• Monitor sources for new posts

• Process new gathered post for keywords/named entities/addresses

• Geocode location described in a post

• Mark the incident on a the map
Results

Launch
Results

Launch 1 Hour 3 Hours Few days
Conclusions

• Proposed approach is workable and allows to mark various types of situations on the map, including in real time.

• Using this tool one can identify which areas are mentioned most often, what the nature of the damage is, and where urgent repairs are required.
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