PAIRS

Privacy-Aware, Intelligent and Resilient CrisiS Management

Social Signal Detector

Detection of crisis-related indicators in social media

PROBLEM STATEMENT:

Crises send out early warning signals; mostly weak and difficult to detect amidst the noise of everyday life. Signal detection based on social media enables early identification of such signals supporting pro-active organizational responses before a crisis occurs. Nonetheless, it is not applied in practice as it is challenging due to the high volume of noise.

SOLUTION:

- Open-domain social signal detection of crisis-related indicators in tweets that works with multi-lingual Twitter data and combines multiple state-of-the-art models for data pre-processing (SoMaJo) and data filtration (GPT-3^{FT} (Curie))
- Signaling service for risk and crisis management supports most spoken languages in the world (e.g., Spanish, English) and is able to detect social signals in tweets for open domains, e.g., energy, finances, supply chains, natural disasters

RESULTS:

- Signaling module for open-domain social signal detection in crisis management based on domain of interest of users described in plain text
- Output: potential signals of upcoming crisis event including visualizations
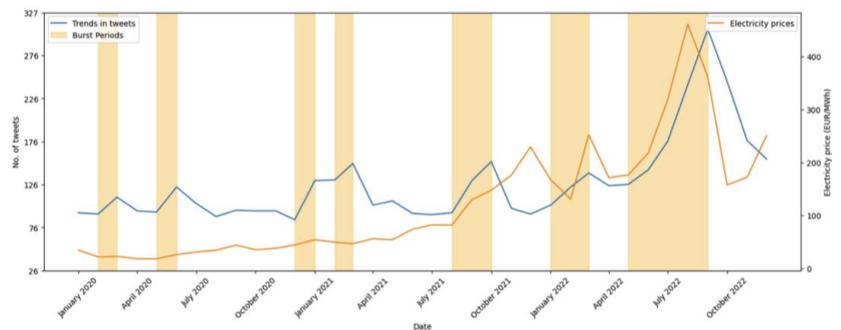
(a) Crisis event e_1:'Peak in electricity price', Germany, Jan 2020 - Dec 2022.

Case study: identification of social signals 4, 8, and 12 weeks before energy-related crisis events (01/2020 - 12/2022) in Germany, Spain, UK

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