PAIRS
Privacy-Aware, Intelligent and
Resilient CrisiS Management

Newspaper Signaling

Detection of crisis-related indicators in newspaper articles

Britannica, The Editors of Encyclopaedia. "newspaper".

PROBLEM STATEMENT:

Monitoring newspaper sources has significant impact on companies, health organizations, and civil defense in preparing for and responding to emerging trends, conflicts, and crises; but, up til now, newspaper signaling is not applied in crisis and risk management as it is challenging due to the amount of unstructured data, media and cultural bias, and multiple languages.

SOLUTION:

- Model for multi-lingual and open-domain newspaper signaling for detecting crisis-related indicators in unstructured data of newspaper articles in real-time (STANZA, GPT3.5)
- Most spoken languages in the world (>90) (e.g., Mandarin Chinese, Spanish, English, Hindi, Arabic) as well as open domains, e.g., energy, finances, supply chains, that can be directly adjusted by the users in terms of keywords describing the domain of interest

RESULTS:

Signaling service for open-domain signal detection in newspaper articles for risk and crisis management
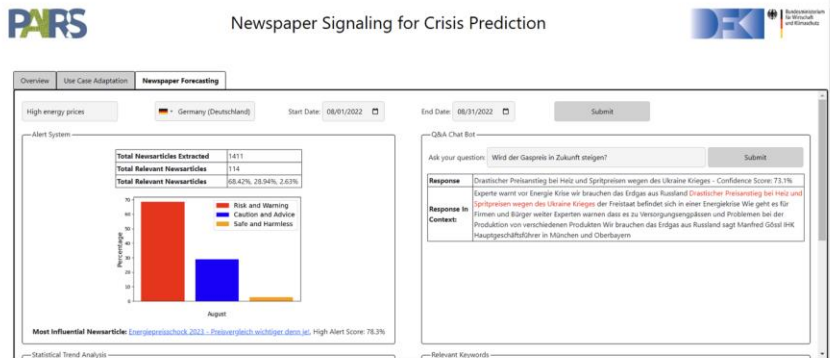
Model	e_1	e_2	e_3
XLM-RoBERTa$_{Large}$	0.46	0.37	0.27
DeBERTaV3	0.65	0.58	0.61
BART	0.6	0.68	0.63
GPT$_{3.5}$	**0.75**	**0.8**	**0.79**

Case study: Detection of newspaper signals 4, 8, and 12 weeks before upcoming energy-related crisis events e_1, e_2, e_3 in Germany

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