**Spatiotemporal Twitter Analysis of the Venezuelan Food Crisis**

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### Abstract

Social media from countries with limits to free speech is often the most reliable source of event occurrence and is a reliable alternative form of journalism. Spatiotemporal analysis of location-based social media data allows new ways to describe events. Almost 37,000 Spanish geo-tagged Tweets from the city of Caracas, Venezuela were used to observe reactions to the food shortage crisis within each of the city’s five municipalities. The number of Tweets over time is explored. The hypotheses of whether certain Tweets are particular to a municipality location is tested using multinomial na**ï**ve Bayes, logistic regression and k-nearest neighbor machine learning classifiers.

### Image

**Figure 1 – Accuracy of Predicting Caracas municipality based on Twitter text keywords.**

**Recent Publications**

1. Andrienko, G., Andrienko, N., Bosch, B., Ertl, T,, Fuchs, G., Jankowski, P., Thom, D. (2013): Discovering Thematic Patterns in Geo-Referenced Tweets through Space-Time Visual Analytics. In: Computers in Science and Engineering, v.15(3), pp.72-82.

2. Barnola, T., R. Corredor, M. López de Blanco, C. Allison and A. Aristiguieta. Análisis de la Crisis de Alimentos en Venezuela. Informe de la Comisión, 24 de augosto 2010.

3. Bastos, M.T., Recuero, R., Zago, G.Taking Tweets to the Streets: A Spatial Analysis of the Vinegar Protests in Brazil.*First Monday*, 2014.

4. Bird, S., E. Klein and E. Loper. Natural Language Processing with Python. 2009. O’Reilly Media.

5. Bora, N., Zaytsev, V., Chang, Y.H. and R. Maheswaran. Spatiotemporal Patterns in Social Networks. 2013 AAAI Fall Symposium Series.

Biography

Laura Kahn is pursuing her master’s in Data Science from Indiana University with a passion for using data to reduce hunger and poverty using technology. She has volunteered with various local hunger alleviation nonprofit groups.

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