Week 8-3: Paper Summaries

CE-510 Seminar: Social Media Mining

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■ Deep learning for real-time social media text classification for situation awareness – using Hurricanes Sandy, Harvey, and Irma as case studies

Traditional methods like SVM, LR are constrained by their poor generalizability to a new disaster event. Deep learning like CovNets performances very well in text analysis, like sentiment analysis, text classification. And some disaster events like flood, earthquake can also be identified using some social media data with CNNs.

Possible Improvement Directions:

1. Future research may test the performance of CNN-based model using labeled twitter datasets

2. To improve the classification accuracy, features of each tweet can be enhanced by adding the ontextual information, including its geolocation, environmental conditions (e.g. wind and precipitation), and other linked media (news, blogs, images, and videos)

3. In terms of paper writing, te introduction of reprocessing in section 3.2 is not clear, with no examples provided. Spatial distribution analysis in section 4.1 and visualization in Figure 3, 4,5 are unnecessary in this paper, since no geolocation information is used in DL models.

■ Towards Deep Learning Prospects: Insights for Social Media Analytics

In this survey they:

1. Provides a contemporary summary of existing DL methods that can exhibit a roadmap to extract useful insights for SMA

2. Provides a classification scheme that identifies important features to study semantics of the problem which may be helpful for designing better future vision in diverse SMA application domains

3. Investigates the pros and cons of existing techniques.

4. Enlightens the prominent application domains for applying DL.

5. Uncovers the noteworthy research challenges and future directions.

The social media mining problems are categories into 4 main streams, they are user behavior analysis, business analysis, sentiment analysis and anomaly detection.

Possible Improvement Directions for deep social media analytics:

1. Develop trust-aware social recommendation, as data source is always noisy and not fully reliable

2. Develop Multi-language or cross-language model to break the language barriers

3. Avoid too much dimensionality reduction, and reduce computational complexity