Neural models for Rumor Detection

Social media has now become the de-facto information source on real world events. The challenge of social microblogs, however, due to the high volume and velocity nature of social media streams, is in how to follow all posts pertaining to a given event over time. And beyond this, is to verify the event's truthfulness. In the trend of deep learning, a lot of successful efforts in applying complex neural models for the task of rumor detection have been presented [1,2,3]. In this work, we give an exhaustive study on these models on the very early stage, to see if emerging rumor patterns repeat themselves from the past [4], and if existing neural models can capture them well.

This work is relevant for master thesis.

Prerequisites for students who are interested in the topic:

- Good programming skills with Python
- Knowledgeable about basic machine learning and data mining models
- Hand-ons experience with Scikit-learn, tensorflow or pytorch is preferable

What you will get:

- Cool topic for a master project / thesis
- Machine Learning skill set
- Structured thinking[1]
- Fun

If you are interested, please contact: Tu Nguyen: tunguyen (at) l3s (dot) de.

References

[1] Ma, Jing, et al. "Detecting Rumors from Microblogs with Recurrent Neural Networks." *IJCAI*. 2016.

[2] Chen, Tong, et al. "Call Attention to Rumors: Deep Attention Based Recurrent Neural Networks for Early Rumor Detection." *arXiv preprint arXiv:1704.05973* (2017).

[3] Ruchansky, Natali, Sungyong Seo, and Yan Liu. "CSI: A Hybrid Deep Model for Fake News." *arXiv preprint arXiv:1703.06959* (2017)..

[4] Wu, Liang, et al. "Gleaning wisdom from the past: Early detection of emerging rumors in social media." *Proceedings of the 2017 SIAM International Conference on Data Mining*. Society for Industrial and Applied Mathematics, 2017.

1 Structured thinking is a process of putting a framework to an unstructured problem.