Tree LSTMs with Convolution Units to Predict Stance and Rumor Veracity in Social Media Conversations

The paper proposes to use convolution units in Tree LSTMs that are better at learning patterns in features obtained from the source and reply posts. It gives two hints. One is that tree LSTMs can have a better effect in showing the connection between sources and reply, which will improve the effect. Another is that a useful signal (stance in this paper) will lead to a better performance in rumor classification.

Reply-Aided Detection of Misinformation via Bayesian Deep Learning

The paper uses a Bayesian deep learning model to represent the uncertainty of the prediction to rumor veracity. The paper firstly encodes a claim to be verified, and generate a prior belief distribution from which we sample a latent variable, then encodes all the people’s replies to using LSTM to update the prior belief generating posterior belief. The paper uses Stochastic Gradient Variational bayes to get the iterations.

Determining the veracity of rumors on Twitter

The paper extracts over 80 trustworthiness features including the authors’ profile and past behavior, the social network connections, and the content of tweets themselves, and uses classical machine-learning methods to classify rumors and get a good performance.

Automatic Detection and Verification of Rumors on Twitter

To predict the veracity of rumors, the paper identifies salient features of rumors by examining three aspects of information spread: linguistic style used to express rumors, characteristics of people involved in propagating information, and network propagation dynamics. Then the paper uses hidden markov model to predict the veracity of tweets.

Predicting Stances in Twitter Conversations for Detecting Veracity of Rumors: a Neural Approach

The paper’s solution comprises two key steps. Firstly, detect the stance of each individual tweet, by considering the textual content of the tweet, its timestamp, as well as the sequential conversation structure leading up to the target tweet. Then use the predicted stances of all tweets in a conversation tree to determine the veracity of the original rumor.