Network of the Day: Interactive Visualization of Time-Dependent Entity Relation Networks from Online Sources

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Tool description
- Interactive visualization of time-dependent relationships of public agents (persons and organizations) extracted from German online news
- Transparent and intuitive tool for the exploration of current events
- Cooperative tagging of relationships
- The target group of this tool are journalists, but also laymen such as students, voters and politically interested citizens
- Typeahead search mask allows users to find entities in the current network and center the respective cluster

Software and Architecture
- Modern web & visualization frameworks: Jquery, CoffeeScript, D3.js, Highcharts, Marionette.js
- Graph Layout: Force Layout converges to local optimum thus no jitter and much more stable network
- Download data from Leipzig Server:
  - Daily dataset of approximately 20,000 - 50,000 sentences taken from online newspapers as e.g. Zeit, Spiegel, Handelsblatt, Kicker ("Wörter des Tages", Quasthoff et al., 2002)
- NE Extraction:
  - Stanford Named Entity Parser (Faruqui and Padó, 2010; Finkel et al., 2005)
- Create daily graph:
  - Using Markov Chain Clustering to find communities
  - Using PageRank to select displayed entities (Page et al., 1999)
- Graph representation:
  - Jung framework for in-memory graph representation

Daily Network Visualization

Future Work
- Incorporation of Twitter data
- Direct comparison of entities such as persons, organizations and events, appearing in both Twitter and online newspaper articles
- Networks representing time-spans
- Automatic relationship tagging

References
- PageRank: B. publication, 1998, 1999

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\* http://www.hochschulwettbewerb2014.de