An exploratory analysis of news trends on twitter

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Introduction

Analyzing information streams from social media exploiting structural and topical information of the network

→ Fusion and **Visualization** of information for insights

- *Text Analysis*: **Named Entities** co-occurrences and Entities **Relations**
- *Structural Analysis*: **Topic** sensitive **influential users** of the network
- *Visualization Routines*: **Interactive** tools for extracting knowledge

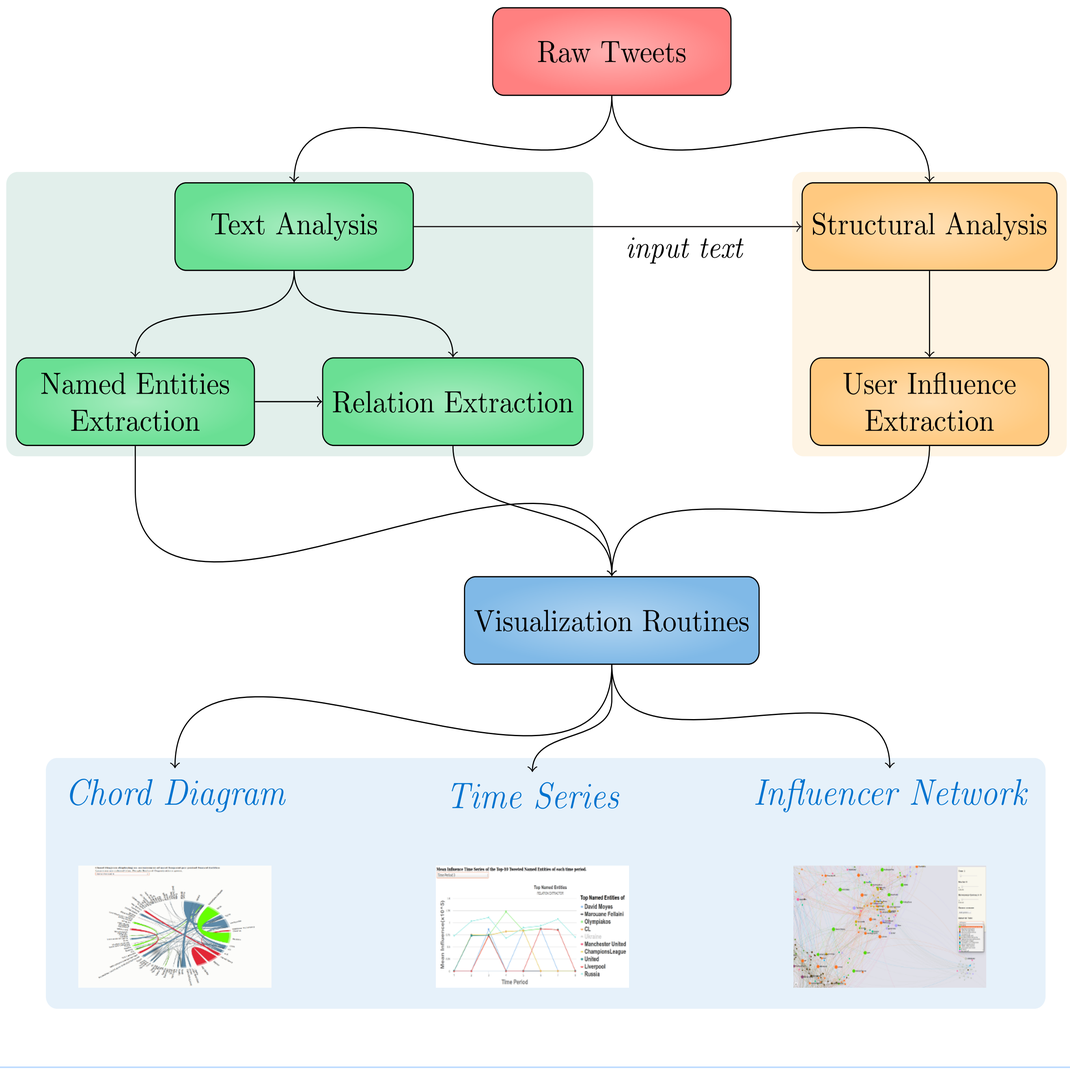
Data

Twitter Stream 25^{th} Feb. 2014

\# Keywords: *Ukraine*, *terror*, *Syria*, *bitcoin*

≈ 560.000 ≈ 1.000.000 ≈ 1.100.000

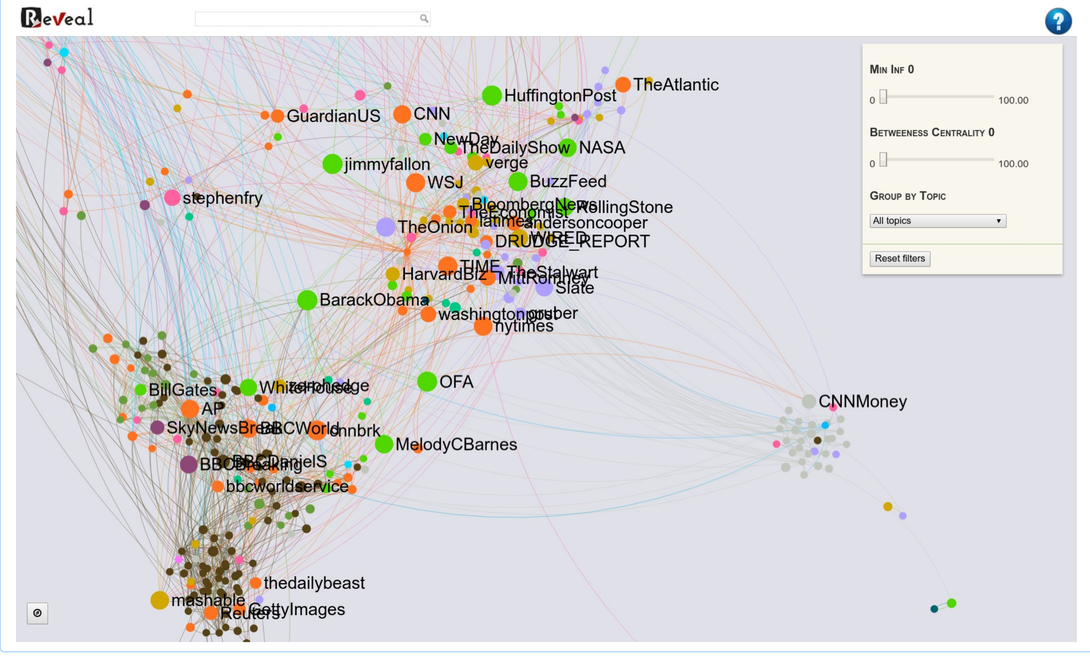
Workflow Diagram



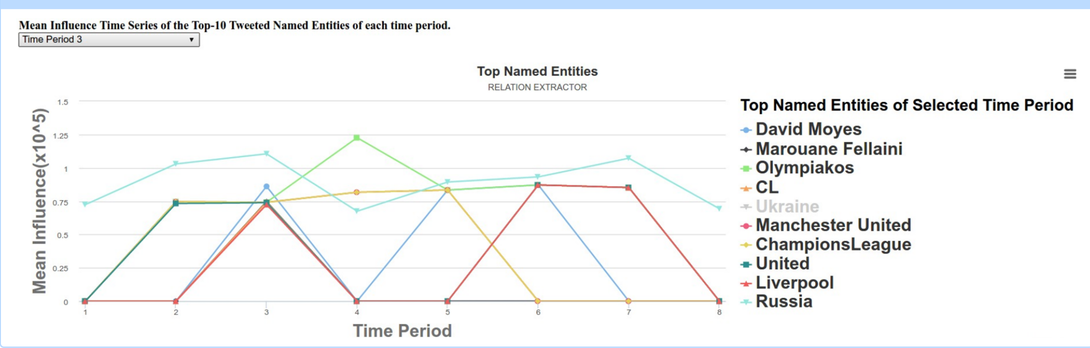
Data Analysis

- **Content Information**:
  1. *Preprocessing* routines ⇒ Data cleaning
  2. *Named Entities Recognition* ⇒ Semantically important events
  3. *Relation Extraction* ⇒ Meaningful interconnections
- **Structural Information**:
  1. *Topic Modeling* ⇒ Discover discussion themes
  2. *User Interconnections Mining* ⇒ Identify Influential Users

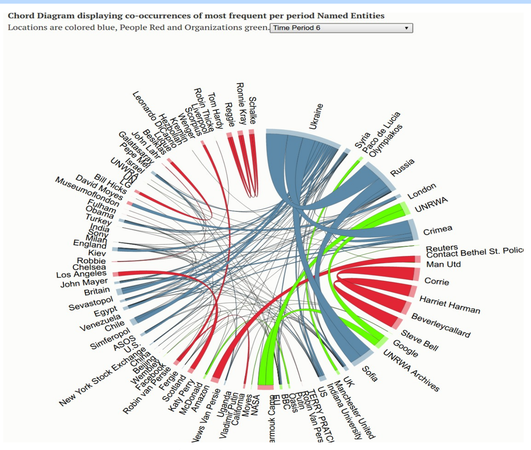
User Network



Influence Time Series



Named Entities Relations



(a) Chord Diagram (b) Named Entities Network

Conclusions

✓ Devised a framework for analyzing and exploring news streams

✓ Employed expressive visualization tools for knowledge fusion and discovery

FutureWork

- New visualization routines → *Source Tracking*, *False news Detection*
- Over-watching multiple story-lines over time
- Incorporate new analysis tools, descriptive topic statistics, dynamic topics, ...

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Demo:

http://users.iit.demokritos.gr/~bogas.ko/

Demo Demokritos Persona Reveal