DATABASE SYSTEMS GROUP

Ludwig-Maximilians-Universität München
Institut für Informatik
Lehr- und Forschungseinheit für Datenbanksysteme

LMU

Hauptseminar

Mining Volatile Data

Wintersemester 2012/13

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November 14, 2012 Presentations Part 2

http://www.dbs.ifi.lmu.de/cms/Hauptseminar_"Mining_Volatile_Data"_WS1213

Agenda for today

- **Sentiment analysis**

1. Sentiment Knowledge Discovery in Twitter Streaming Data, DS 2010. — Christof Angermüller

- **Change detection**

2. Temporal Structure Learning for Clustering Massive Data Streams in Real-Time, SDM 2011. — Georg Eutermoser

- **Outlier & Event detection**

3. “On the Spatiotemporal Burstiness of Terms”, VLDB 2012. — Beatrix Vad
4. “Event Detection in Social Streams”, SDM 2012. — Philipp Zormeier
5. “Integrating Community Matching and Outlier Detection for Mining Evolutionary Community Outliers”, KDD 2012. — Lucia Cichella

Sentiment Knowledge Discovery in Twitter Streaming Data

- Works upon an opinionated text stream
- Goal: Online sentiment classification over an evolving stream

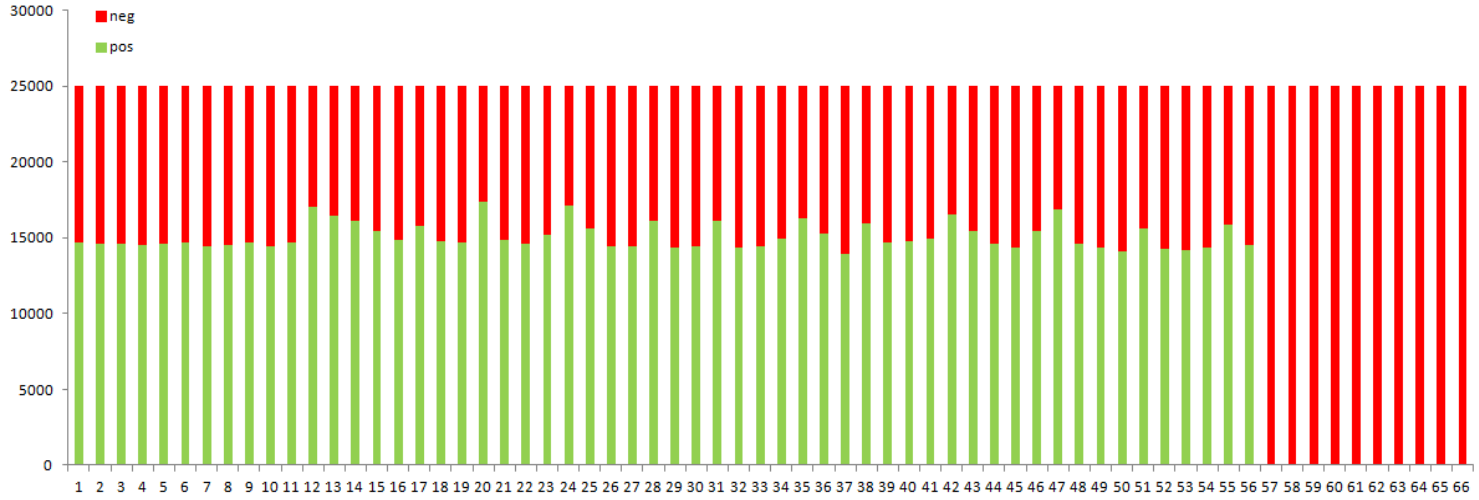


Image taken from the BA of Alina's Sinelnikova titled
"*Sentiment analysis in the Twitter stream*"

Sentiment was also discussed in Presentations part I by Liangchen. The focus there though was on static sentiment analysis and on how sentiment and content could be combined.

Temporal Structure Learning for Clustering Massive Data Streams in Real-Time

- Works upon a data stream
- Goal: Model the temporal structure of data streams via clustering and Markov Chains

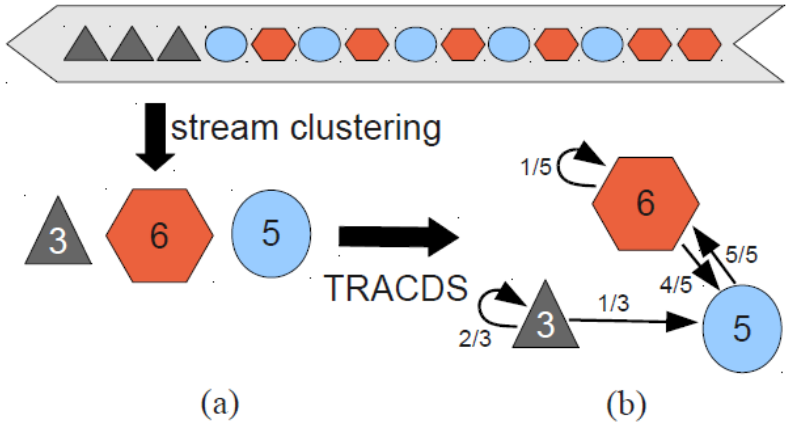


Figure 1: Stream Clustering: (a) Partitioning of a data stream using standard (data stream) clustering neglects the temporal aspect of the data. (b) With TRACDS temporal relationships between clusters are learned dynamically as an evolving Markov chain (transitions between clusters are represented by arcs).

On the Spatiotemporal Burstiness of Terms

- Works upon temporally annotated document streams generated from different locations
- Goal : spatiotemporal term burstiness

Figure 1: Spatiotemporal collection $\mathcal{D}$. The white dots represent streams of data originating in different locations on a 2D map.

Event Detection in Social Streams

- Works upon a social stream (content-based interactions between structurally connected entities)
- Goal : event detection

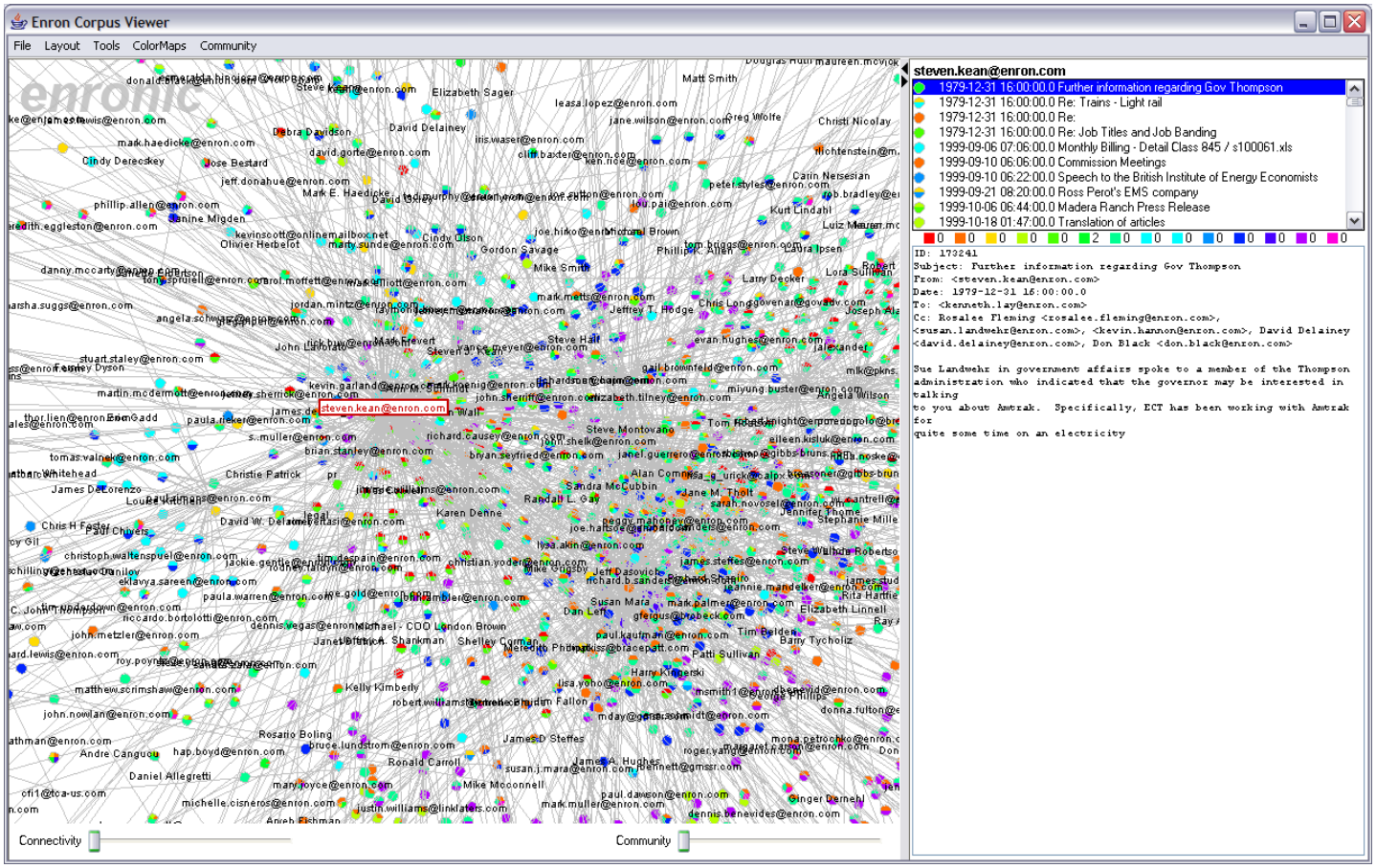
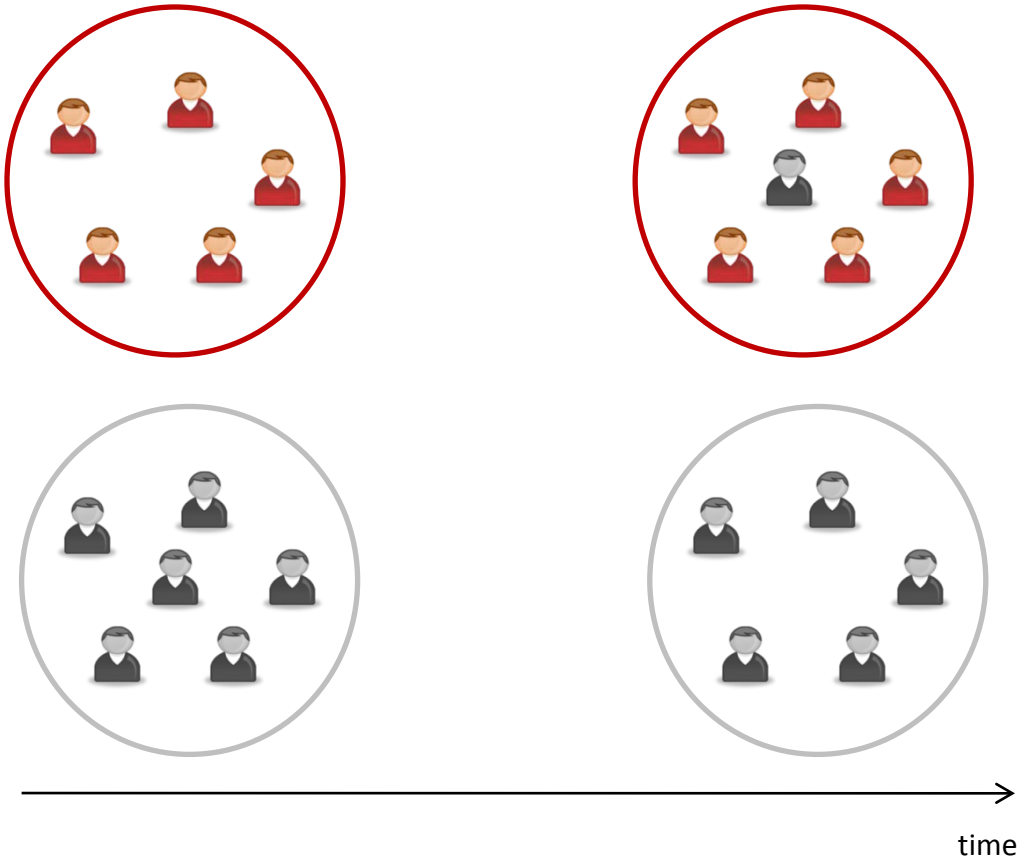


Image taken from http://hci.stanford.edu/jheer/projects/enron/v1/

Integrating Community Matching and Outlier Detection for Mining Evolutionary Community Outliers

- Works upon a temporal graph
- Goal : detect community outliers



Thank you!

End of presentations today!

- Open issues
  - Please send me the reports of your papers.
  - Final grade and feedback on presentation/report.
- Discussion
  - Questions?
  - Suggestions for the seminar organization/ topics?