15. Visualization of topic evolution in news articles

More and more texts are available in digital form. Especially when these texts go back over many years (like with digitized newspapers and archives), it is interesting to understand how topics have evolved over time. How did a political situation change? How did a company start and evolve?

Our demo shows an automatic visualization of the evolution of a topic over time. We take a different approach on traditional search result ranking methods as for example used by Google. We show a summary over time of the topic searched for. This summary can be used to quickly get an overview of the back-story of an entity in the text.

ICT science question

How can we visualize the historical background of an entity appearing in a text in a concise way, without overloading the user with information? This is a hard problem, because of the need to summarize and visualize a large search result without having to cut off the information at a certain point (such as after the first page of Google search results).

Application

Our main application lies in the visualization of the back-story of entities in news articles. Existing alternatives include word clouds, which ignore the dimension of time, or stream plots which focus on the trend comparison of a predefined set of categories, which ignores the open character of topics.

Alternative Application

Visualization of critical events is applicable in many situations. Our system will also be used to assist operators of the Metis System for Situation Understanding. This system will assist operators in maritime situations by highlighting vessels that the system deems worthy of attention. The operator then can investigate the back-story of a vessel using the methods presented above.

Applying the demo to alternative domains would be as simple as finding and converting a suitable corpus of documents.

Allow a user to see in the definition of a topic over time at a glance.

The definition of a topic or an entity is important, especially how it changes over time. We provide a visualization of such a change at a glance.

How did a political situation change overtime?

Analyze large sets of textual information by leveraging the ability of the human brain to spot exceptions to patterns.

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