LensingWikipedia: Parsing Text for the Interactive Visualization of Human History

http://lensingwikipedia.cs.sfu.ca

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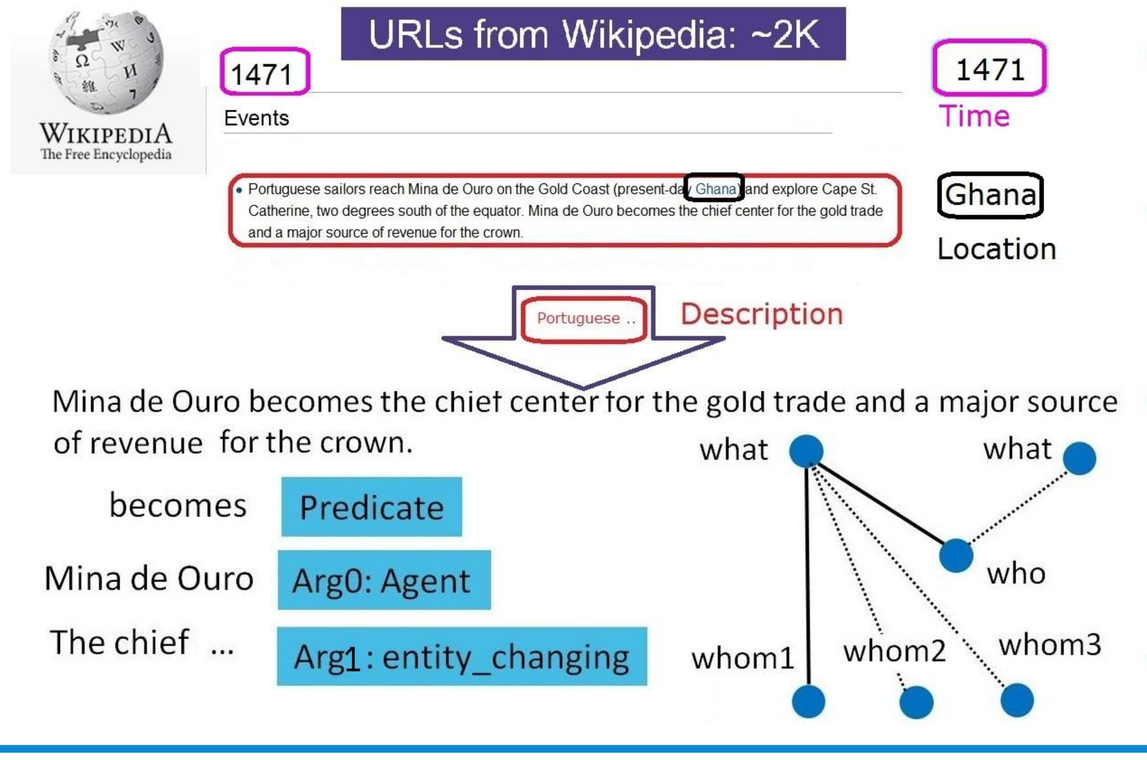
Problem

The complexity of natural language makes text visualization challenging. Typical approaches ignore the rich grammatical structure of language. We present a visual browser for thousands of historical events from Wikipedia which uses natural language processing (NLP) tools.

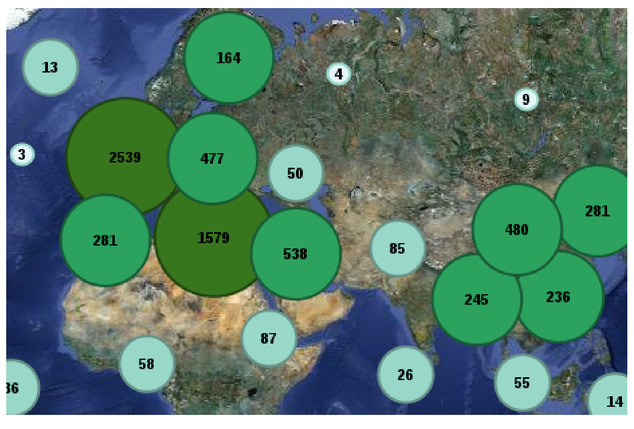
Contribution

- A novel visualization of high-level textual information leveraging linguistic structures
- 20,000 events extracted, described by one to several sentences
- Events situated in time and space



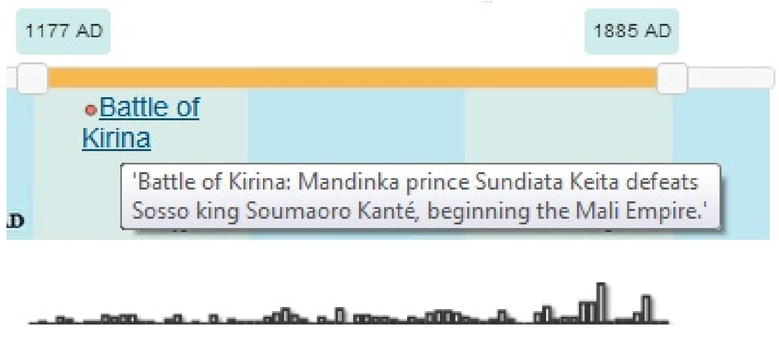
Visualization

Map



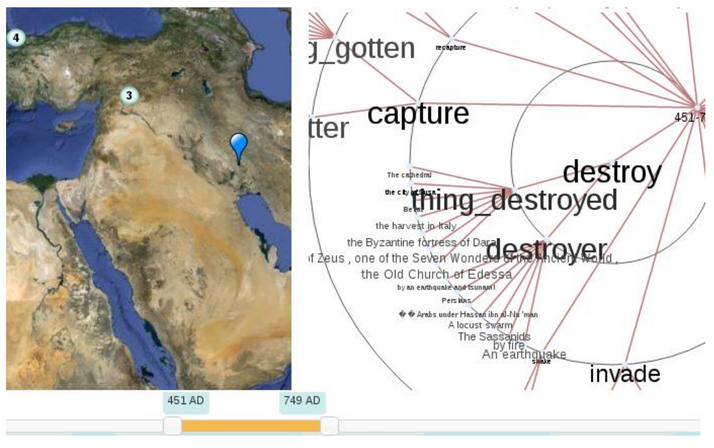
- Events situated on interactive map
- Pan/Zoom to focus on specific events
- Cluster colors depict intensity

Timeline



- Timeline shows temporal information
- Bar graph: distribution of events across timeline
- User's events of interest shown on the timeline view
- MouseOver on event title shows original sentence(s)
- Click title to open Wikipedia page.

Parse graph

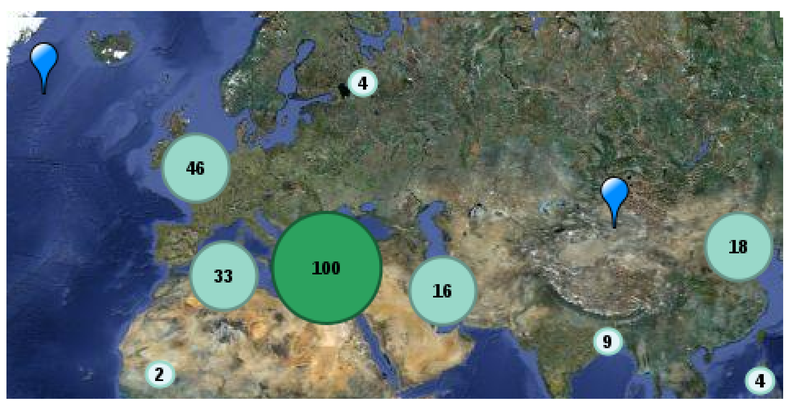


- Visualizes predicate-argument structure
- Clickable predicate types, roles of their arguments as a tag cloud
- Advanced browsing with intuitive concepts ('thing_destroyed')

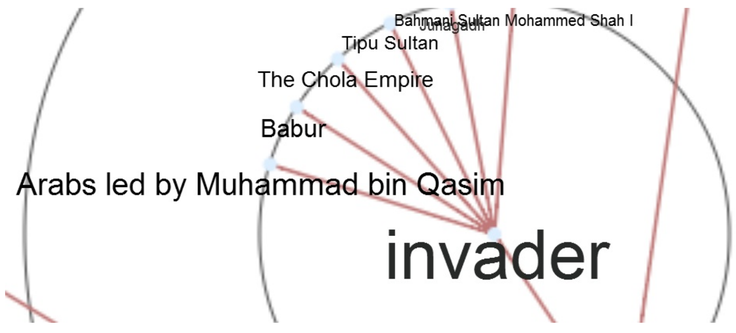
Observations

- Location summary with single click

- Country or countries participated in 'wars' with single click



- Monitor Wikipedia coverage
- Two clicks to list 'invaders' of a specific location



LensingWikipedia.cs.sfu.ca: A website that uses NLP in order to provide an interactive visualization of events in human history from Wikipedia. Valuable insights can be obtained easily by browsing this interactive visualization.

Acknowledgement

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