Improving Barycentric Embeddings of Topic Spaces

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**Background**

Glyphs design: (a) Using spikes as topic hints as in [1] for a single document. (b) Overplotting of spikes of two documents.

The regular barycentric embedding as in [1]: The glyphs show one spike for each related topic which causes a lot of visual clutter and overplotting in the center of the visualization.

**Reducing Overplotting: Jittering**

Introducing jitter provides an impression of the actual number of documents.

**Reducing Visual Clutter: Grid**

Using a grid and aggregating glyphs leads to a tidier display without overlaps.

**Reducing Position Ambiguity: Reduced Glyph Design**

The reduced glyph design encodes only the most prominent topic: (a) Single document. (b) Aggregation of two documents. (c) Hovering reveals a polygon connecting all relevant topics.

**Reducing Position Ambiguity: Layout Guidelines**

Two topic space layouts showing the same document: (a) Non-Optimized: the two most prominent topics are placed directly opposing each other. Therefore, the document is placed almost in the center. (b) Optimized: Using odd numbers of topics avoids a layout of directly opposed placement of topics. Additionally, placing related topics adjacent to each other pulls the document off the center of the visualization.

**Use Case : Argument Search Interface**

Interactive visualization of an argument search engine [2] (https://args.me): (a) Visualisation of the results of the query “feminism”, showing the eight most prominent topics of the results plus the “other” topic – a summarization of all other. The color displays the stance as pro, contra, and neither. The glyphs’ sizes indicate the number of arguments being represented. (b) Hovering over an argument displays a magnified version of the glyph as well as a polygon for emphasizing all topics that influenced its position.

**References:**


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