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Assessing Quality of Unsupervised Topics in Song Lyrics

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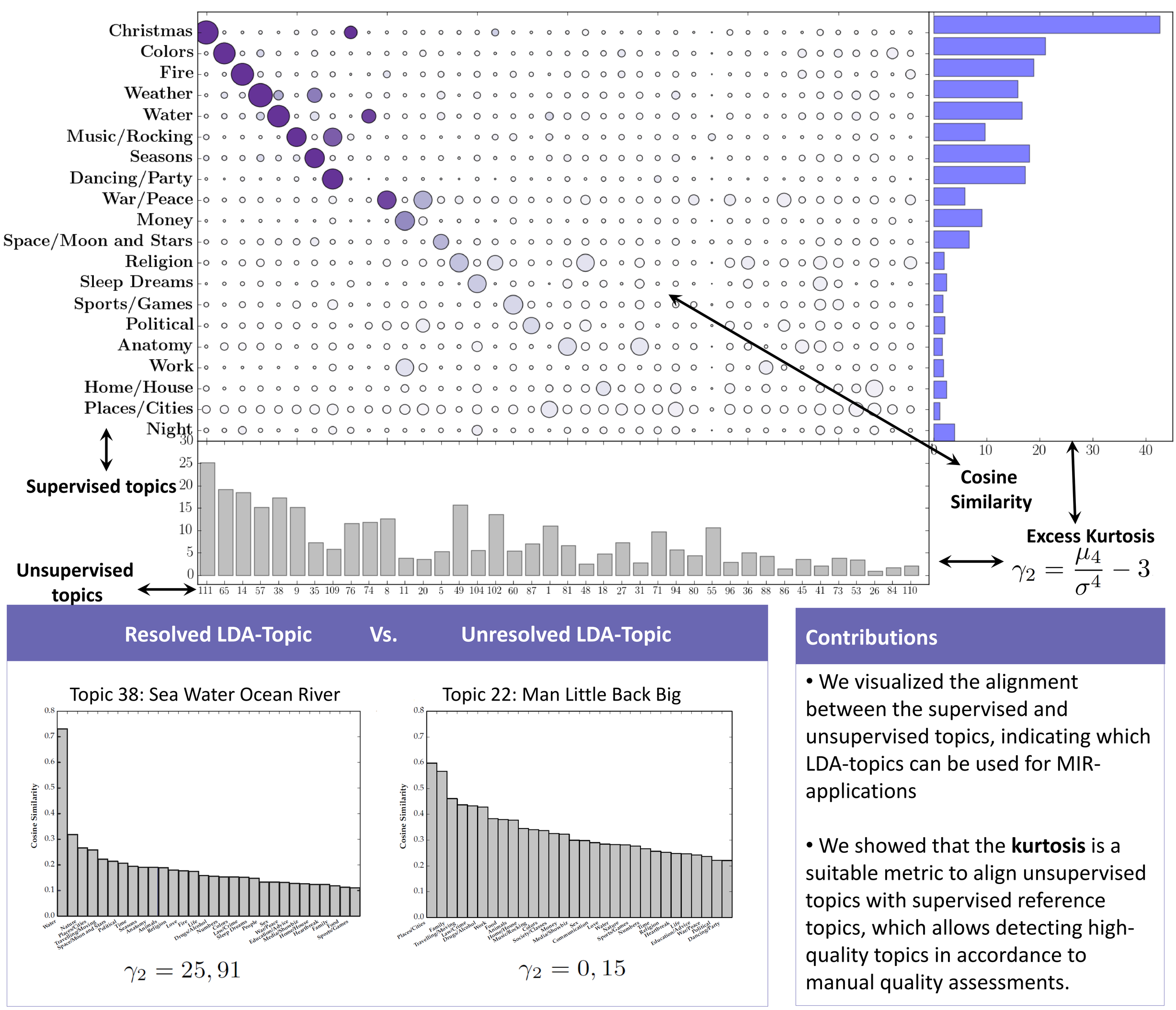
How useful are topic models based on song lyrics for applications in music information retrieval?

- No guarantee for interpretable results
- *A thorough evaluation of the output required*
- **We introduce a framework for the large-scale assessment of topical relevance using supervised topics and alignment between unsupervised and supervised topics**

Experimental Setup

- Unsupervised Topic Model (**LDA**)
  - `Million Song Dataset': 237,662 song lyrics
- Supervised Topic Model (**Labeled-LDA**):
  - ` GreenbookofSongs.com' : 9,261 manually annotated song lyrics (High Quality Topics)



Resolved LDA-Topic Vs. Unresolved LDA-Topic

Topic 38: Sea Water Ocean River

$\gamma_2 = 25,91$

Topic 22: Man Little Back Big

$\gamma_2 = 0,15$

Contributions

- We visualized the alignment between the supervised and unsupervised topics, indicating which LDA-topics can be used for MIR-applications

- We showed that the **kurtosis** is a suitable metric to align unsupervised topics with supervised reference topics, which allows detecting high-quality topics in accordance to manual quality assessments.