

## Introduction

- Topic models are widely applied to discover thematic topics
- The discovered topics do not always make sense to end users
- Confuse two or more themes into one topic
- Two different topics can be (near) duplicates
- Some topics make no sense at all
- We proposed Interactive Topic Modeling (ITM, Hu et al. 2013) Uses tree-based topic models
- Allows users to encode their feedback iteratively
- Question: Does ITM help users? and how?
- Solution: Perform user study for ITM

#### **Tree-based Topic Models**

- Model the correlations of words
- Positive correlations: encourage words to appear in the same topic
- Negative correlations: push words away from the same topic
- Use tree prior instead of a symmetric prior to model the correlations



#### Interactive Topic Modeling

- Encode users' feedback as correlations
- Give non machine learning experts a voice to update topics
- Update the topics iteractively and iteratively



# **User Study for Interactive Topic Modeling**

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### Interface

Interface for	ITM user study
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- Web-based application with a HTML and jQuery front end, connected via Ajax and JSON
- Includes two parts: refine topics and a test
- Multiple ways to explore the corpus to answer the questions

Start page and topic display

topic 3

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© This is just a test 2012			taxes death_ costs children health_care rate	tax cost education paid capita funding benefit businesses debt of a business fiscal jobs cut	I_gains administration olleagues economy		
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	legislations			debate4-turn0; bill9-del debate2-turn23; bill9-de debate2-turn14; bill9-de	bate1-turn36; bill9- ebate2-turn9; bill9-		
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United States?							
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amendment united veterans

america law border social\_security system english issue

immigrants immigration service borders provided

care job american\_people national\_security deal provision provide colleagues

history security understand coming ability issues homeland\_security department







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