

## Problem

- Many news portals => many similar articles
- Content-based recommendation recommends similar articles with little new information

## Goal

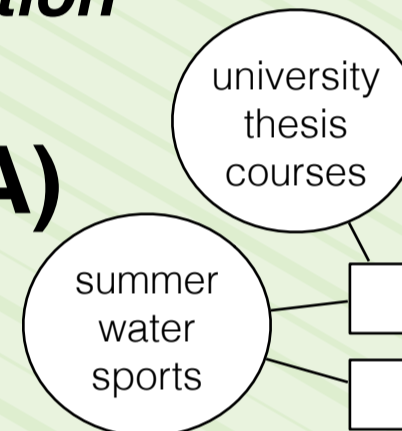
- Design and evaluate a method that recommends news articles by their novelty to the user

## Novelty

*"Novel items should be similar to previously delivered documents in the sense of having the same topic, but also dissimilar to the previously delivered documents in the sense of containing new information"*

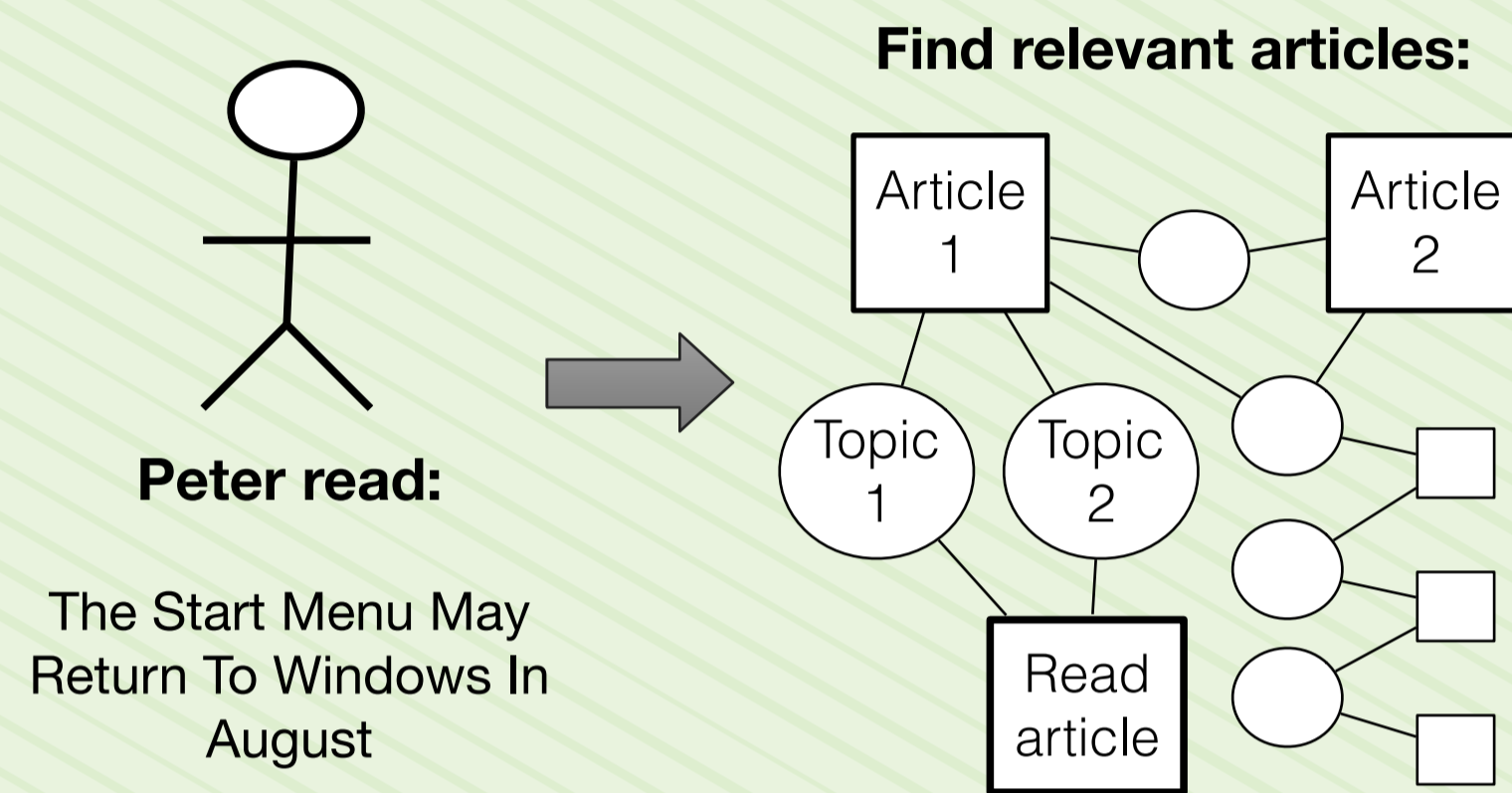
## Topic Modelling (LDA)

- One article has many topics
- Topics are groups of related words



## 1. Find relevant articles

- Find close articles to the ones the user read by their topics
- Propagate a rank starting from the read articles across article—topic connections



## Method

## 2. Rank articles by their novelty

- Find articles that contain topics novel to the user
- Topics have different qualities, we rank them by their novelty and importance
- Rank of a topic is based on the IDF of its terms
- The rank is calculated for each user separately

### Relevant articles:

- Windows 8 Start Menu Coming This Fall?
- Windows users, meet Cortana

### Rank novelty of topics:



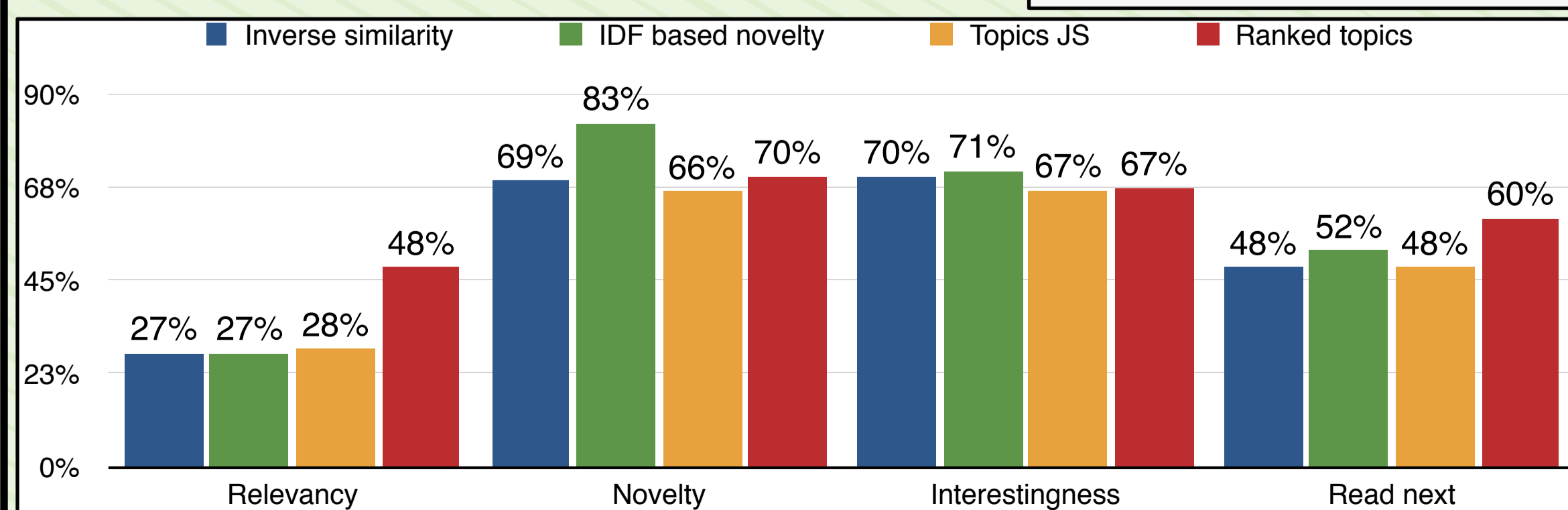
### Recommend novel articles:

Windows users, meet Cortana

## Evaluation

### Offline evaluation

- We collected comparisons of articles based on novelty, relevancy and interestingness
- We evaluated our method and 3 different approaches to novelty detection
- 5 participants, 152 compared articles
- Our method scored best in relevancy and choosing articles to read next



### Online evaluation

- Online recommendation of articles
- We evaluated our method with methods for recommendation both with (IDF based novelty) and without novelty detection (MoreLikeThis)
- 23 participants at Ontožúr, 310 read articles
- Recommendations by MoreLikeThis and our method had comparable precision
- Useful to combine recommendations by methods with and without novelty detection

