Hyperbolic Topic Network Visualization

Graphical representation and visualization of the topic network.

- Explore large-scale news videos at the topic level
- Recommend the news topics of interest interactively.

Limited screen size

Hyperbolic geometry

- Project the topic network onto an hyperbolic plane.
- Inner-topic contextual relationship.
- Layout it out by mapping relevant news topic onto a circular display region
Personalized Topic Network Generation

Change of focus, implemented by changing the mapping of the news topic from hyperbolic plane to unit disk for display.

- Without losing contextual relationship
- New approach for capturing the search interest automatically
  - Interestingness score
  - Visiting times
  - Staying seconds
  - Interaction depth
  - Relevant new videos to the given news topic
Personalized News Video Recommendation

- Large number of videos under the same topic.

**New algorithms:**
1. Ranking the news videos. (Time factor)
2. Recommend the most relevant videos.
Personalized news video recommendation

- Recommend top 5 new videos --> Importance & Representative score
- Recommend new topic of interest
- Recommend the most relevant online text news
- Record the search history and preferences.
Algorithm Evaluation

Evaluation of:
1. Performance. News topic detection
2. Response time in change of focus
3. Efficiency and accuracy
Comparison result of automatic new topic detection algorithm by integrating different sources.
Empirical relationship between the computational time (seconds) and the number of news topic nodes