EXPOSÉ: Exploring Past News for Seminal Events
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Overview

EXPOSÉ is an exploratory search system that explicitly uses temporal information associated with events to link different information sources for an effective and efficient exploration of past events. We use Wikipedia and news articles as two orthogonal sources where Wikipedia is viewed as an event directory that systematically organizes seminal events in a year, and news articles as a source of detailed information on each event that took place in past.

Time-aware Language Models

Publication-Date Approach
- News published around the event date more likely to discuss the event in detail
- Recency as the user’s temporal information intent

Temporal-Expression Approach
- Non-contemporary but relevant articles refer to the time period of the event in their content.
- Ranks articles higher if many temporal expressions in content refer to the time period of the event

Publication-Date + Temporal-Expression
- Combines the publication-date and temporal-expression approaches

Two-Stage Cascade Model

Uses pseudo-relevance feedback to improve query model and rerank documents based on divergence [1]

Stage 1
- Top-k articles

Stage 2
- Top-10 Result

Reranked Articles
- Query temporal model
- Temporal Expression extraction

Options:
1. Two-stage cascade approach
2. Publication-date approach
3. Temporal-expression approach
4. Publication-date + Temporal-expression approach
5. Activates standard text search

A user can type an event description and date to refine search or to enter a new event.

User with an unclear information need can start by browsing through the Wikipedia lists organized collectively as a directory of events and jump to connected news articles for more fine-grained details.

System Architecture

- Interface sends RESTful web-service request to temporal retrieval engine.
- Inverted index for text and time for efficiency
- Visualization module performs facet extraction and updates the user interface.

Examples

1. Description
   President Bush declares victory over Iraq and orders a cease-fire.
   Date
   February 27 1991

2. Description
   Aretha Franklin becomes the first woman inducted into the Rock and Roll Hall of Fame.
   Date
   January 3 1987

3. Description
   Ukrainian journalist Georgiy Gongadze is last seen alive; this day is taken as the commemoration date of his death.
   Date
   September 16 2000