NOVALINCS
LABORATORY FOR COMPUTER SCIENCE AND INFORMATICS

FCT NOVA – COMPUTER SCIENCE PhD PROGRAM

TEMPORAL MODELS FOR MICROBLOG SEARCH

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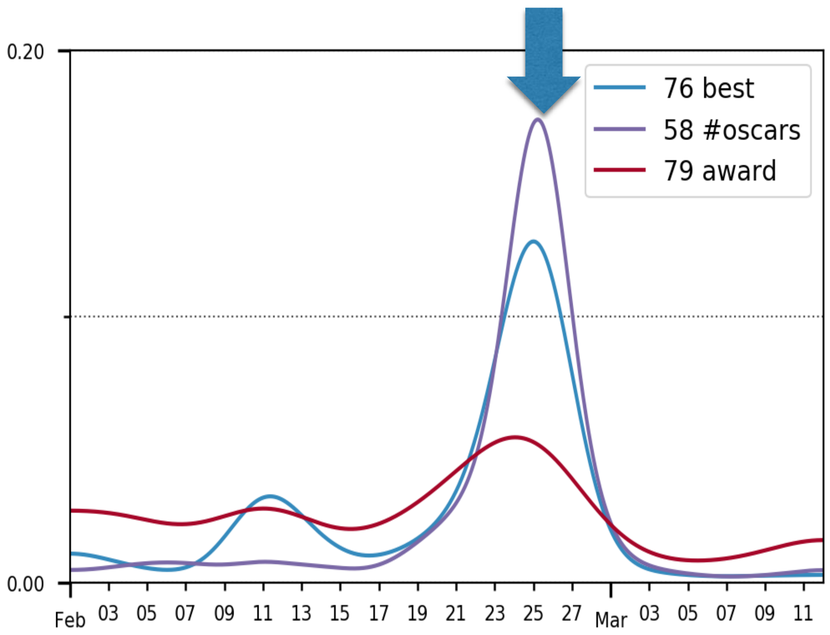
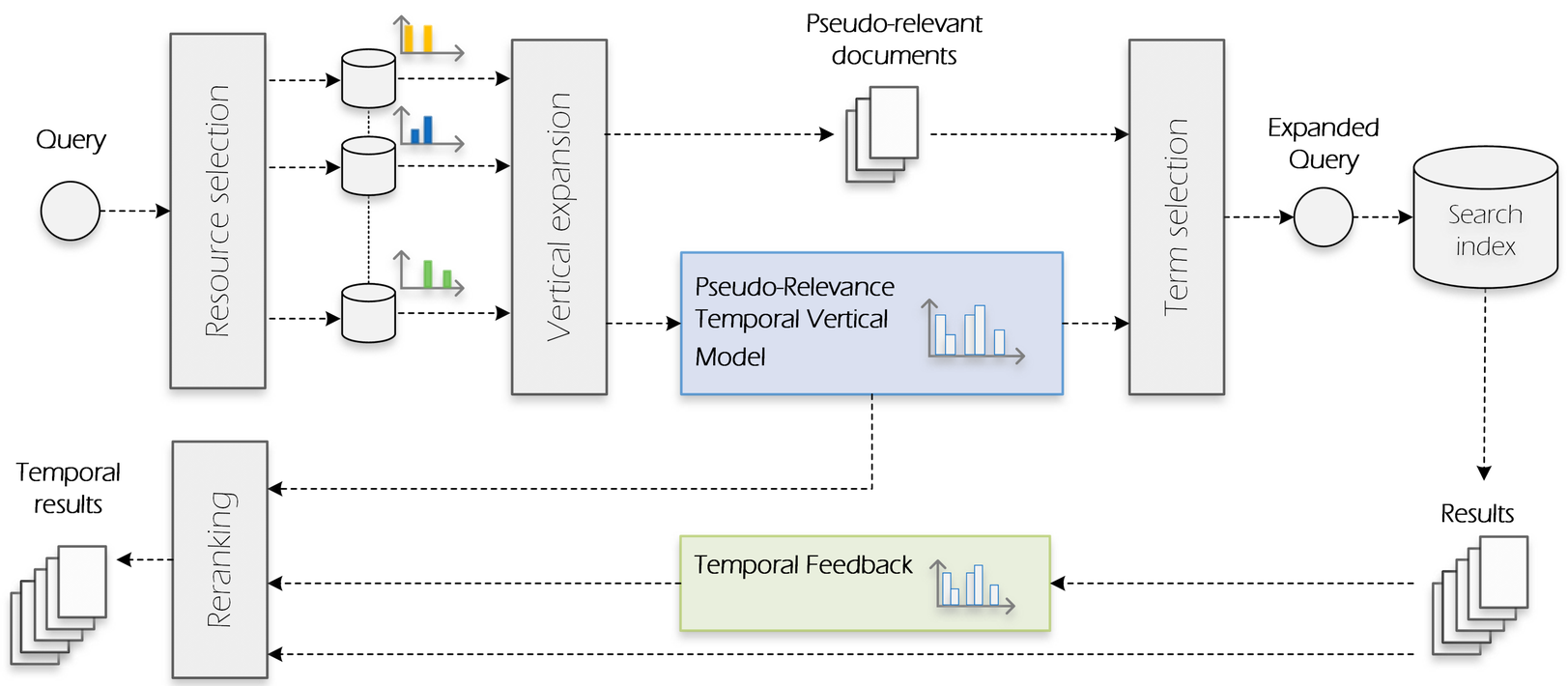
My research is on real time social media search and relates to data mining, information retrieval and ML.

Relevant time period



Search: Argo wins Oscar



Context and Problem

What is happening now prompts users on the Web to produce and interact with new posts about newsworthy events giving rise to trending topics.

We leverage on the behavioral dynamics of the crowd to estimate a topic's temporal relevance i.e., the most relevant time periods for a search query.

1. How to perform analysis over heterogeneous streams of data?
2. How to filter, weight and aggregate different sources?
3. How to integrate temporal information in retrieval?

Approach

The timeliness of the information shared in microblogs poses an opportunity for collecting temporal evidence from multiple verticals

e.g., politics, business, sports, etc.

Pseudo-Relevant Vertical Temporal Models is an efficient query modeling architecture that leverages on temporal evidence and learning-to-rank to re-rank time-sensitive queries.

Web temporal cluster hypothesis
in search tasks where time plays an important role, do relevant documents tend to cluster around time periods that correlate with a measurable activity increase about the topic through the Web?

Projects / future directions

F. Martins, J. Magalhães, and J. Callan. 2016. Barbara Made the News: Mining the Behavior of Crowds for Time-Aware Learning to Rank. In Proceedings of the Ninth ACM International Conference on Web Search and Data Mining (WSDM '16). San Francisco, USA

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