Social Knowledge Graph Explorer

Omar Alonso, Vasileios Kandylas, Serge-Eric Tremblay

Xiaofan Yan

Abstract

- Present SKG Explorer, an application for querying and browsing asocial knowledge graph derived from Twitter that contains relationships between entities, links, and topics.

Introduction

- SKGExplorer
  - Besides basic functionality like search and navigation, allows users to query and derive a story for a given entity as a "wikification" of the search results where the retrieval units are presented in temporal order with more context, evidence from Twitter, and the ability to pivot to related stories for exploration.

- Main components
  - Users: trusted users
  - Links
  - Topics: High confidence entities
  - Posts
  - Time

Introduction

- The SKG schema
  - Captures the main components of the social network and the connections between them
  - It focuses on "first order" connections

- The design philosophy:
  - The data are computed on a continuous basis
  - Hourly

Schema and implementation

- Component tables
  - Users
  - Links
  - Topics
  - Posts
- Connection tables
  - Users-Links, Users-Topics, Users-Users, Users-Posts
  - Links-Topics, Links-Links, Links-Posts
  - Topics-Topics, Topics-Posts

Schema and implementation

- All tables contain one main score, used for static ranking users, topics, links, and posts
- Repeated posts by the same account, mentioning for instance a link and a topic, only contribute one vote
- Each produced graph is thus as napshot of the social activity during that hour
- At the end of each day/month/year, we aggregate the whole period graphs into a single periodly summary graph

Demonstration

- Topic: Brexit
  - Hashtag #brexit
  - Related entities are UK, EU, Britain, Theresa May
  - Related hashtags are #eu, #stop brexit, #fbpe
  - Related n-grams are vote, leave, people, referendum
  - links or images people share about it
  - dive into any of these connections

Demonstration

- As a wiki page
  - Automatically generated page is organized in sections and sub sections, selected from other topics
  - The structure of the page thus resembles the structure of a wiki
  - Construct a time line around topic showing the major events and topics that happened, organized by date

Conclusion

- Describe a knowledge graph explorer that allows users to query and discover relationships derived automatically fromTwitter