

History-related Content Recommendation in Social Networks based on User's Interest Estimation

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Introduction

Motivation:

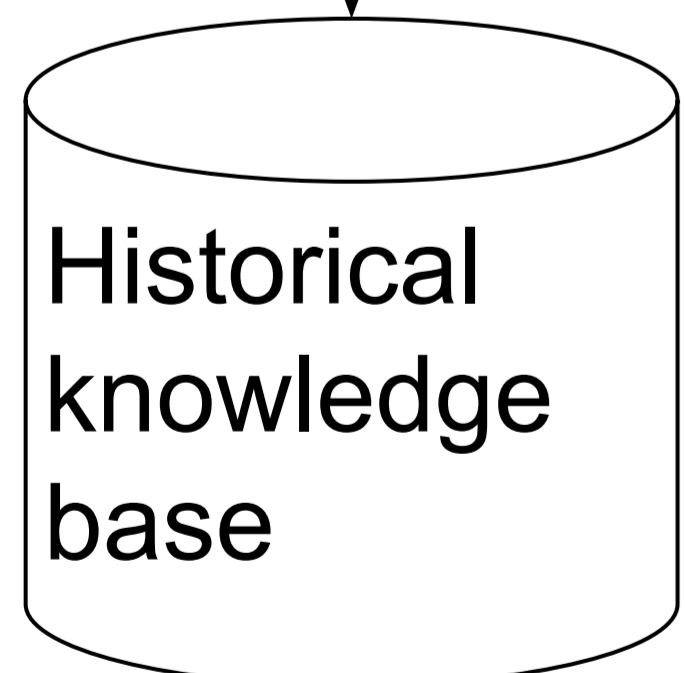
Studying and analyzing historical data can provide numerous benefits: comprehension of the past, analogies over time, and so on.

Contribution:

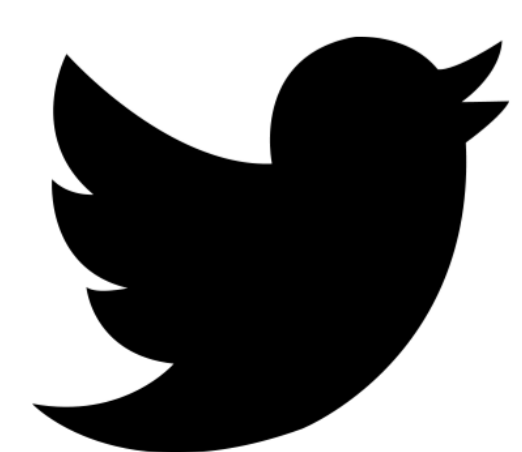
Our system recommends history-related content in a customized way *according to the estimated interests of users*



stores past events
Period: 1AD to 2019AD
Pages: January 1 to December 31.



Num. of event: 71,374



share history-related content with large numbers of users

Snapshot of system interface

Recommendation

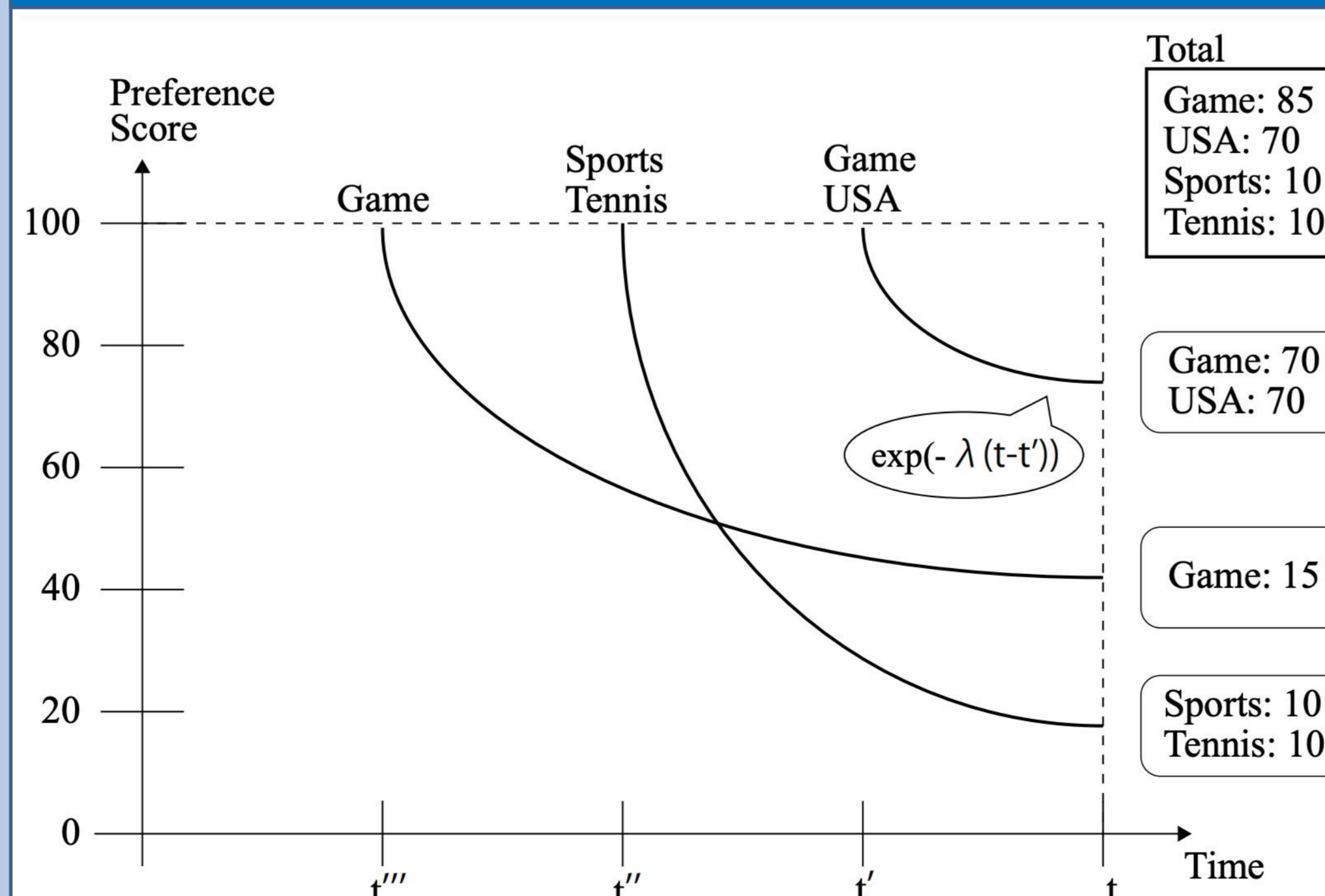


February 11 - David Hockney's 1966 painting The Splash sells for £23.1m at auction at Sotheby's in London.

Tweet History



Key idea



Assumptions

1. When a Twitter user posts a certain tweet, the user is basically interested in the content of the tweet. *The interest level however fades with time*
2. *The content of repeated tweets forms continuous interest of the user*

Algorithm

Example of inputs:

- I visited **National Museum of Art, Tokyo** today. It was so nice place.
- I especially watched **Gaudi** and the **Sagrada Familia**

Word extraction

1. Collecting past tweets
 2. Tokenizing
 3. Removing stop words
- Ex.: **national, museum, art, tokyo**

Weight assignment

Applying the forgetting curve of memory model (the figure in Key idea)

Estimating interest topics

- Use Wikipedia categories as topics
- Use TAGME to get Wikipedia cat.
Ex.: **Sagrada Familia**
TAGME → **Art Nouveau church buildings in Spain**
- Ranking by cosine sim. + LSA

Conclusions

We proposed a chatbot to present a history-related content in line with user interests by analyzing the interests of Twitter users based on their posted tweets and considering the passage of time. In future we will analyze what type of history-related content attracts the interest of users.