Recommendation System using Foursquare Check-in Data

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Contents

- Problem definition
- Motivation
- Methodology
- Data Acquirement
- Demo
- Conclusion & Future Work

Problem Definition

- Spend spare times effectively
  - Limited spare time
  - Hard to explore new venue
- Cold system
  - User data from Foursquare
  - Venue data from Foursquare
- Foursquare
  - User check-in data
  - Venue location data
  - Open api

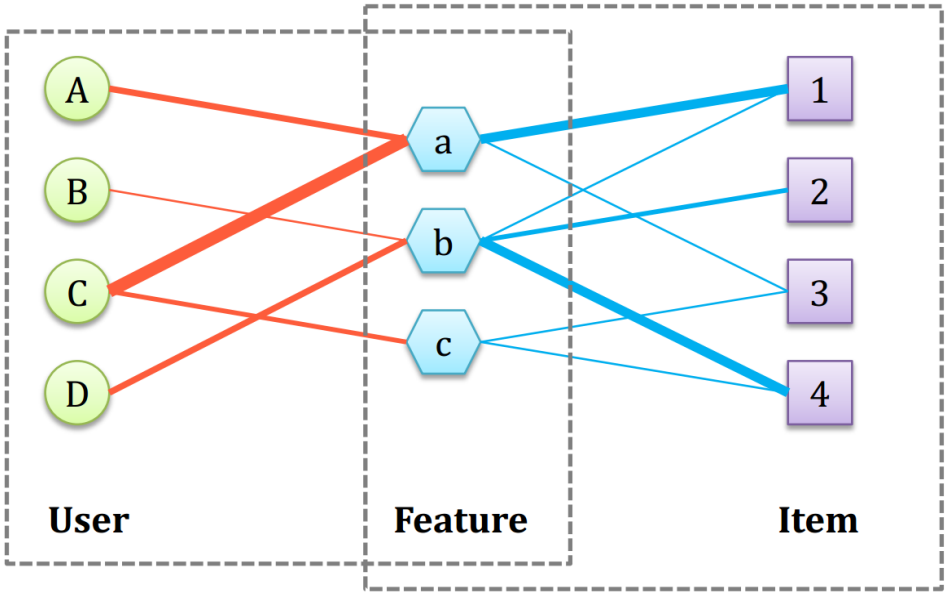
Motivation

- Recommended venues
  - Make users happy
  - Make venue owners happy

- Lack of recommendation systems
  - Foursquare provides just friend-based suggestions
  - There is no popular application
  - Community needs! :)

Methodology

- Graph-based
  - Users' behaviors on items can be represented by bi-part graph. [1]
  - Users and items are connect by latent features. [2]



Data Acquirement - Venue

- Query from Foursquare API for Java about venues.
  - Ankara
  - Unique user count > 50
  - Total check-in count > 250
- Clean the data
  - Irrelevant categories
    - road, bank, government building
  - Irrelevant places categorized differently
- Data
  - ~1800 venues
  - ~100 categories

Data Acquirement - User Profile

- User use foursquare account to login
  - Basic user information
    - first name, last name, gender, home city
  - User check-in history
    - number of checkins on each category
  - User likes, badges etc.

Demo

Conclusion & Future Work

- Build a recommendation system based on Foursquare data.
- System suggests a place according to user's past check-ins, day of week and time of day parameters.
- As future work, we will build more compact recommendation system.
  - Parameters will be retrieved from mobile applications.
  - Locations will be added as a new parameter.

Questions?

References

1. Zan Huang, Wingyan Chung, Thian-Huat Ong, and Hsinchun Chen. 2002. A graph-based recommender system for digital library. (JCDL '02).
2. Deepak Agarwal and Bee-Chung Chen. 2009. Regression-based latent factor models. In*Proceedings of the 15th.* (KDD '09).