Curriculum Vitae

Name: XU, ZHENXING
Gender and Date of birth: Male, October 17, 1986
Email address: xuzhenxing@zju.edu.cn, xuzhenxing2010@163.com
Mobile phone number: (+86)13588251157

Education:

Sep. 2012 - Jun. 2017	Name of university: Zhejiang University
	Degree level: Ph.D.
	Degree major: Computer science and technology
	Area of research: Data mining
	Title of thesis: A study of recommending travel locations on geotagged photos (Supervisors: Ling Chen and Gencai Chen)
Sep. 2009 - Mar. 2012	Name of university: Zhejiang Sci-Tech University
	Degree level: Master of engineering
	Degree major: Computer science and technology
	Area of research: Computer vision
	Title of thesis: Research of pedestrian detection and tracking based on machine visual (Supervisors: Wenshu Li)
Sep. 2004 - Jun. 2008	Name of university: Chaohu University
	Degree level: Bachelor of engineering
	Degree major: Computer science and technology

Publications:

1. **Xu Z**, Chen L, Dai Y. Chen G. A dynamic topic model and matrix factorization based travel recommendation method exploiting ubiquitous data [J]. *IEEE Transactions on Multimedia* (SCI, IF=2.536), 2017, 19(8): 1933-1945.
2. **Xu Z**, Chen L, Chen G. Topic based context-aware travel recommendation method exploiting geotagged photos [J]. *Neurocomputing* (SCI, IF=2.392), 2015, 155: 99-107.
3. **Xu Z,** Chen L. A survey of the mining of geotagged photos [J]. *Communications of the China Computer Federation*, 2014, 10(5): 31-34. **Invited Article.**
4. **Xu Z**, Chen L, Chen G. Trip similarity computation for context-aware travel recommendation exploiting geotagged photos [C]//*Proceedings of the 30th International IEEE Conference on Data Engineering Workshops* (ICDEW) (EI). 2014: 330-334.

5. **Xu Z**, Chen L, Guo H, Lv M, Chen G. User similarity based gender-aware travel location recommendation by mining geotagged photos [J]. *International Journal of Embedded Systems* (Accepted) (EI).
6. Lv M**,** Chen L, **Xu Z**, Li Y, Chen G. The discovery of personally semantic places based on trajectory data mining [J]. *Neurocomputing* (SCI, IF=2.392), 2016, 173: 1142-1153.

Papers Submitted:

1. **Xu Z**, Chen L, Dai Y. Chen G. Time-aware travel location recommendations using ubiquitous data [J]. *IEEE Transactions on Human-Machine Systems*. (2rd revised).
2. **Xu Z**, Chen L, Majid A, Dai Y. Chen G. A Travel location recommendation system using the metadata and contents of geotagged photos by matrix factorization with associated regularizations [J]. *Applied Intelligence*. (2rd revised).
3. **Xu Z**, Chen L, Lv D, Chen G. A Location-aware public welfare activity information push system based on microblog [C]. 2018 ACM International Joint Conference on Pervasive and Ubiquitous Computing (*Ubicomp 2018*).

Research experience:

1. Recommending travel locations in different contexts based on topic model exploiting geotagged photos.

With the prevalence of intelligent cell phones and digital cameras with global positioning systems (GPS), people can casually take photos with geo-tags, and share these photos on social network sites (e.g., Panoramio and Flickr). There are the huge volumes of community-contributed geotagged photos (CCGPs) available on the Internet, which could be regarded as digital footprints of photo takers. The information of CCGPs can be utilized by many applications, e.g. searching, advertising, annotation, and recommendation. We propose a method to recommend travel locations in a city for a user, based on topic distribution of his travel histories in other cities and the given context (i.e., season and weather). In particular, a topic model is used to mine the interest distribution of users. The season and weather context information is acquired by using the third Web service (i.e., Wunderground) and then was considered to recommend travel locations in different contexts. We evaluate this method on a real dataset, which contains photos taken in eleven cities of China. (This work has been published in *Neurocomputing*).

2. Recommending travel locations in fine-grained time contexts using Ubiquitous Data.

Time information is helpful for recommending travel locations for a user. However, a user usually visits only a very limited number of travel locations in different time contexts, which makes it difficult to learn user travel preferences. We propose a

time-aware method to recommend travel locations for a user. In particular, a user-location-time tensor, i.e., the numbers of photos taken by different users, at different locations, and in different time contexts, is built from CCGPs to model user preferences. To fill the missing entries of the tensor, we then introduce additional information that is mined from the metadata and visual contents of CCGPs, Check-ins, and Point of Interest (POI) categories datasets to form collaborative tensor decomposition model. After that, the completed tensor is obtained and the value of an entry is used as a particular user travel preference indicator of visiting a particular travel location in a particular time slot. Our method is evaluated on three real datasets (CCGPs, Check-ins, and POI categories datasets), which are collected from Flickr and Sina Weibo, covering four famous tour cities of China. Experimental results show that the proposed method can obtain tourist latent travel preferences and generate effective recommendations. (This work has been submitted in *IEEE Transactions on Human-Machine Systems*).

3. **Recommending travel locations based on dynamic topic model and matrix Factorization exploiting Ubiquitous Data.**

The vast volumes of CCGPs available on the Web can be utilized to make travel location recommendations. The sparsity of user-location interactions makes it difficult to learn travel preferences, because a user usually visits only a limited number of travel locations. Static topic models can be used to solve the sparsity problem by considering user travel topics. However, all travel histories of a user are regarded as one document drawn from a set of static topics, ignoring the evolving of topics and travel preferences. We propose a dynamic topic model (DTM) and matrix factorization (MF) based travel recommendation method. A DTM is used to obtain the temporally fine-grained topic distributions (i.e., implicit topic information) of users and locations. In addition, a large amount of explicit information is extracted from the metadata and visual contents of CCGPs, Check-ins, and POI categories datasets. The information is used to obtain user-user and location-location similarity information, which is imposed as two regularization terms to constraint MF. We evaluate this method on three real datasets, which contains photos and check-ins collected in four cities of China. (This work has been published in *IEEE Transactions on Multimedia*).

Projects:

1. Dec. 2014 - Jun. 2017, Research on Pushing Public Welfare Activities Based on Big Data Mining of Sina Weibo, supported by Natural Science Foundation of Zhejiang Province, China. There are five modules in this project: (1) Constructing the ontology of public welfare activities; (2) Studying the classification technology of hierarchical public welfare activities web page; (3) Building the profiles of volunteers from Sina Weibo; (4) Discovering proper volunteers for public welfare activities based on matrix factorization; (5) Pushing public welfare

activities based on mobile terminal timely. **My tasks are to finish the third and fourth models.**

2. Jun. 2011 - Jan. 2012, Research on diagnosing video quality, supported by Zhong Ao Technology Company of Zhejiang Province, China. In this project, several models were completed, for example, color cast detection, blur detection, snow and stripe detection, jitter detection, and shelter detection.

Activities:

1. Mar. 29, 2013, ACM SIGSPATIAL China Symposium on Big Data and User Understanding. Organized by University of Science And Technology of China, in this conference, my oral presentation title is: Personalized Travel Recommendations by Mining Community Contributed Geotagged photos.
2. Dec. 23, 2013, ACM SIGSPATIAL China Symposium on Understanding Big Data in Ubiquitous Environment. Organized by Suzhou University of China, in this conference, my oral presentation title is: The understanding of mining ubiquitous data based on travelling, traffic, and air quality.
3. Sep. 13-14, 2014, The 10th conference on Harmonious Human Machine Environment. Organized by Beihang University of China, in this conference, my oral presentation title is: User Similarity based Gender-Aware Travel Location Recommendation by Mining Geotagged Photos.
4. Sep. 11-13, 2015, The 11th conference on Harmonious Human Machine Environment. Organized by Liaoning Technical University of China.
5. May. 2014-Jun.2017, Guiding three undergraduates to complete their graduation designs.

Awards:

1. Outstanding Graduate Leader Award, Zhejiang University, 2014.
2. Excellent Master Graduate, Zhejiang Sci-Tech University, 2012.
3. Excellent Undergraduate Graduate, Chaohu University, 2008.