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Computer Science, New Mexico State University, MSC CS, P.O. Box 30001
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EDUCATION

- Ph.D. candidate in Computer Science, New Mexico State University, Las Cruces, NM
Advisor: Huiping Cao
GPA 3.9 (out of 4.0)
Aug. 2012 - Present
Expected to graduate in Aug. 2017
- B.S. in Management Information Systems, Southwestern University of Finance and Economics, Chengdu, China
Sep. 2008 - Jun. 2012

RESEARCH INTERESTS

- **Graph mining**: theory and methodology for discovering influence relationships
- Efficient **learning algorithms** (Gibbs sampling, etc.) for **graphical models**
- Scalable and energy-efficient **machine learning** algorithms on processing big data

PUBLICATIONS

Conference Paper

- **Chuan Hu**, Huiping Cao: Discovering Time-evolving Influence from Dynamic Heterogeneous Graphs, 2015 IEEE International Conference on Big Data (IEEE BigData 2015) the first International Workshop on Mining Big Data in Social Networks (MBD-SONET). Acceptance rate: 42.8%.
- Yifan Hao, Huiping Cao, Yan Qi, **Chuan Hu**, Sukumar Brahma, and Jingyu Han: Efficient Keyword Search on Graphs using MapReduce, 2015 IEEE International Conference on Big Data (IEEE BigData 2015) short paper.
- **Chuan Hu**, Huiping Cao, Chaomin Ke: Detecting Influence Relationships from Graphs, in Proceedings of the 2014 SIAM International Conference on Data Mining (SDM), 821-829, 2014. Acceptance rate: 29% (120/389). <http://dx.doi.org/10.1137/1.9781611973440.94>
- **Chuan Hu**, Chen Zhang, Tiejun Wang, Qing Li: An Adaptive Recommendation System in Social Media, in Proceeding of Hawaii International Conference on Systems Science (HICSS), 1759-1767, 2012. Acceptance rate: 56%. <http://dx.doi.org/10.1109/HICSS.2012.94>

Journal Paper

- Yifan Hao, Huiping Cao, **Chuan Hu**, Kabi Bhattarai, Satyajayant Misra: K -anonymity for social networks containing rich structural and textual information, Social Network Analysis and Mining 4(1):223-261 (December 2014). <http://dx.doi.org/10.1007/s13278-014-0223-3>
- Mohammed N. Sawalhah, Andrés F. Cibils, **Chuan Hu**, Huiping Cao, and Jerry L. Holechek: Animal-Driven Rotational Grazing Patterns on Seasonally Grazed New Mexico Rangeland. In Rangeland Ecology & Management 67(6):710-714 (November 2014). <http://dx.doi.org/10.2111/REM-D-14-00047.1>
- **Chuan Hu**, Huiping Cao: Aspect-level Influence Discovery from Graphs, IEEE Transactions on Knowledge and Data Engineering (TKDE) (*To appear in the next issue*).

RESEARCH EXPERIENCE

1. **Discovering Time-evolving Influence from Dynamic Heterogeneous Graphs** *Jul. 2014 - Jun. 2015*
Las Cruces, NM, USA
We propose a probabilistic graphical model to capture the influence and its dynamics among objects in heterogeneous graphs. A parallel Gibbs sampling algorithm is designed to address the scalability challenge. Extensive experiments show that our proposed model can discover meaningful influence dynamics from heterogeneous graphs, and the proposed learning algorithm scales well on real world data and multicore systems. This work was published at 2015 IEEE International Conference on Big Data (*IEEE BigData 2015*) as a workshop paper.
2. **Detecting Influence Relationships from Graphs** *Dec. 2012 - Jan. 2014*
Las Cruces, NM, USA
In this project, we propose two Bayesian Network models to discover the influence and the influence aspects among objects in graphs. Extensive experiments show that our proposed models can discover meaningful relationships from graphs efficiently. This work was published at *SDM 2014*, and the journal version of this work is under preparation for the major revision of *TKDE*.
3. **Range Project: Spatial and Temporal Data Analysis** *Sep. 2012 - Jan. 2013*
Las Cruces, NM, USA
This is an interdisciplinary project in which we collaborate with Animal and Range Sciences Department of NMSU. This project aims to discover the movement patterns of cattle and the factors that may have impacts on the stocking rate of cattle. We analyze the spatial-temporal data and discover useful patterns. Range researchers agree with the discovered patterns. The result of this work was published at *Rangeland Ecology & Management*.
4. **INews Security Investment Decision Support System** *May 2011 - Nov. 2011*
Chengdu, China *Team Leader*
This project studies how news media influence the stock market. Extensive empirical studies show that news media indeed have impacts on the stock market. Our proposed model can detect the influence degree and period. Further studies show that different categories of news content demonstrate different influence patterns.
5. **News Recommendation in Social Media** *Mar. 2011 - Sep. 2011*
Chengdu, China
In this project we propose a framework to improve the accuracy of the news recommendation by utilizing user comments in social media. Our proposed recommendation algorithm improves the recommendation accuracy compared with the state-of-the-art approaches. This work was published at *HICSS-2012*.

AWARDS

1. SDM2014 Student Travel Support *Apr. 2014*
 - Organization: Society for Industrial and Applied Mathematics (SIAM)
2. Outstanding Teaching Assistant Award *May 2014*
 - Organization: New Mexico State University Computer Science Department.
3. Third Prize (6 out of 200) in Citi Cup National Information Contest *Nov. 2011*
 - Organization: Citigroup Software Technology and Services (China) Limited
 - Project goal: Quantify the impacts of news media on the stock market; develop a user-friendly UI interface
 - Responsibilities: Lead a team with 11 members; technical details in project *INews Security Investment Decision Support System*

- Link: http://www.citigroup.com/china/csts/EducationProgram/AboutEducation_CFC.html
4. First Prize in Chinese University Mathematical Contest in Modeling (CUMCM) *Feb. 2011*
- Organization: Chinese Society for Industrial and Applied Mathematics (CSIAM)
 - Project goal: Analyze the impact of Olympics games on China economy
 - Responsibilities: Write program to collect the statistical information of Chinese economy; build auto-regression and hierarchy analysis model with Matlab

TEACHING EXPERIENCE

- Aug. 2013 - May 2014, Teaching Assistant, Las Cruces, NM
Computer Science Department, New Mexico State University
CS272: Introduction to Data Structures
- Aug. 2014 - Dec. 2014, Teaching Assistant, Las Cruces, NM
Computer Science Department, New Mexico State University
CS271: Object Oriented Programming
- Aug. 2014 - Dec. 2014, Teaching Assistant, Las Cruces, NM
Computer Science Department, New Mexico State University
CS510: Automata and Theory of Computation
- Jan. 2015 - Present, Instructor, Las Cruces, NM
Computer Science Department, New Mexico State University
CS171: Introduction to Computer Science

REFERENCE

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