

Jennifer Jie Xu

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PRIMARY RESEARCH/TEACHING INTERESTS

Knowledge Discovery
Knowledge Management

SPECIFIC RESEARCH INTERESTS

Data Mining and Knowledge Discovery
Social Network Analysis
Knowledge Management
Information Visualization
Human-Computer Interaction
Electronic Commerce

TEACHING INTERESTS

Database Management
System Analysis and Design
Management Information Systems
Data Structures and Algorithms
Computer Networks and Data Communications

EDUCATION

Ph.D. in Management Information Systems, University of Arizona, June 2005
Dissertation: *Mining Static and Dynamic Structural Patterns in Networks for Knowledge Management: A Computational Framework and Case Studies*

Master of Science in Computer Science, University of Mississippi, August 2000

Master of Arts in Economics, University of Mississippi, July 1999

Bachelor of Engineering, Beijing Institute of Technology, China, July 1995

PROFESSIONAL EXPERIENCE

Assistant Professor, August 2005-present

Department of Computer Information Systems, Bentley College

Research Associate, August 2000-July 2005
Artificial Intelligence Lab, Department of MIS, University of Arizona

Graduate Research Assistant, August 1997-July 1998
Department of Economics and Finance, University of Mississippi

Assistant Manager of Information Department, July 1995-August 1996
Mitsui & Co., (China) Ltd. Beijing, China

COURSES TAUGHT

CS 360: Business Systems Analysis and Design, Fall 2006 - present
CS 150: Introduction to Data and Information Management, Fall 2005 - present
Department of Computer Information Systems, Bentley College

MIS 301: Data Structures and Algorithms (Eller College undergraduate core course), Spring 2003, Evaluation: 4.6/5.0
Department of Management Information Systems, University of Arizona

ECON 202: Principles of Microeconomics, August 1998 - May 2000
ECON 301: Business Statistics I, August 1998 - May 2000
ECON 302: Business Statistics II, August 1998 - May 2000
Department of Economics and Finance, University of Mississippi

CSCI 259: C++ Programming, Summer 2000
Department of Computer and Information Science, University of Mississippi

CSCI 575: Database Systems, Summer 2000
Department of Computer and Information Science, University of Mississippi

JOURNAL PUBLICATIONS (REFEREED)

1. **J. Xu**, D. Hu, & H. Chen, "Dynamics of Terrorist Networks: Understanding the Survival Mechanisms of Global Salafi Jihad," *Journal of Homeland Security and Emergency Management*, 6(1), Article 27, 2009.
2. S. Kaza, **J. Xu**, B. Marshall, & H. Chen, "Topological Analysis of Criminal Activity Networks: Enhancing Transportation Security," *IEEE Transactions on Intelligent Transportation Systems*, 10(1), pp. 83-91, 2009.
3. M. Chau, **J. Xu**, J. Cao, P. Lam, & B. Shiu, "Blog Mining: A Framework and Example Applications," *IEEE IT Professional*, 11(1), pp. 36-41, 2009.
4. **J. Xu** & H. Chen, "The Topology of Dark Networks," *Communications of the ACM*, 51(10), pp. 58-65, 2008.
5. **J. Xu**, G. A. Wang, J. Li, & M. Chau, "Complex Problem Solving: Identity Matching Based on Social Contextual Information," *Journal of Association for Information Systems*, 8(10), pp. 525-545, 2007.

6. G. Leroy, **J. Xu**, W. Chung, S. Eggers, & H. Chen, "An End User Evaluation of Query Formulation and Result Review Tool in Three Medical Meta-search Engines," *International Journal of Human-Computer Studies*, 76(11-12), pp. 780-789, 2007.
7. M. Chau & **J. Xu**, "Mining Communities and Their Relationships in Blogs: A Study of Hate Groups," *International Journal of Human-Computer Studies*, 65, pp. 57-70, 2007.
8. J. Schroeder, **J. Xu**, H. Chen, & M. Chau, "Automated Criminal Link Analysis Based on Domain Knowledge," *Journal of the American Society for Information Science and Technology*, 58(6), pp. 842-855, 2007.
9. H. Chen & **J. Xu**, "Intelligence and Security Informatics," *Annual Review of Information Science and Technology (ARIST)*, 40, pp. 229-289, 2006.
10. Z. Huang, H. Chen, F. Guo, **J. Xu**, S. Wu, & W-H. Chen, "Expertise Visualization: An Implementation and Study Based on Cognitive Fit Theory," *Decision Support Systems (DSS)*, 42(3), pp. 1539-1557, 2006.
11. G. Wang, H. Chen, **J. Xu**, H. Atabakhsh, "Automatically Detecting Criminal Identity Deception: An Adaptive Detection Algorithm," *IEEE Transactions on Systems, Man and Cybernetics*, 36(5), pp. 988-999, 2006.
12. **J. Xu** & H. Chen, "CrimeNet Explorer: A Framework for Criminal Network Knowledge Discovery," *ACM Transactions on Information Systems (TOIS)*, 23(2), pp. 201-226, 2005.
13. **J. Xu** & H. Chen, "Criminal Network Analysis and Visualization: A Data Mining Perspective," *Communications of the ACM (CACM)*, 48(6), pp. 101-107, 2005.
14. **J. Xu** & H. Chen, "Fighting Organized Crimes: Using Shortest-Path Algorithms to Identify Associations in Criminal Networks," *Decision Support Systems (DSS)*, 38(3), pp.473-487, 2004.
15. H. Chen, W. Chung, **J. Xu**, G. Wang, M. Chau, & Y. Qin, "Crime Data Mining: A General Framework and Some Examples," *IEEE Computer*, 37(4), pp.50-56, 2004.

PAPERS UNDER REVIEW

WORKING PAPERS

1. "The Information Systems Discipline and Structural Social Capital: An Analysis on IS Collaboration Network" with M. Chau and B. Tan.
2. "A Design and System for Social Network Analysis on Blogs" with M. Chau

CONFERENCE PROCEEDINGS

1. J. Coopriider, H. Topi, **J. Xu**, M. Dias, T. Babaian, & W. Lucas, "A Collaboration Model for ERP User-System Interaction," in *Proceedings of the 43rd Hawaii International Conference on System Sciences (HICSS 2010)*, Kauai, HI, January 5-8, 2010.
2. **J. Xu**, "Identifying Cohesive Local Community Structure in Networks," in *Proceedings of the 30th International Conference on Information Systems (ICIS 2009)*, Phoenix, AZ, December 15-18, 2009.
3. J. Cao, T. Knotts, **J. Xu**, & M. Chau "Word of Mouth Marketing through Online Social Networks," in *Proceedings of the 15th Americas Conference on Information Systems (AMCIS 2009)*, San Francisco, CA, August 6-9, 2009.

4. M. Chau & **J. Xu**, "Studying Customer Groups from Blogs," in *Proceedings of the 6th Workshop on e-Business (We-B 2007)*, Montreal, Quebec, Canada, December 9, 2007.
5. **J. Xu** & M. Chau, "The Social Identity of IS: Analyzing the Collaboration Network of the ICIS Conferences (1980-2005)," in *Proceedings of the International Conference on Information Systems (ICIS 2006)*, Milwaukee, WI, December 10-13, 2006.
6. **J. Xu** & M. Chau, "Mining Communities of Bloggers: A Case Study on Cyber-Hate," in *Proceedings of the International Conference on Information Systems (ICIS 2006)*, Milwaukee, WI, December 10-13, 2006.
7. M. Chau & **J. Xu**, "A Framework for Locating and Analyzing Hate Groups in Blogs," **Best Paper** in *Proceedings of the 10th Pacific Asia Conference on Information Systems*, Malaysia, July 6-9, 2006.
8. **J. Xu**, H. Chen, Y. Zhou, & J. Qin, "On the Topology of the Dark Web of Terrorist Groups," in *Proceedings of the IEEE International Conference on Intelligence and Security Informatics*, San Diego, CA, May 23-24, 2006.
9. A. G. Wang, **J. Xu**, & H. Chen, "Using Social Contextual Information to Match Criminal Identities," in *Proceedings of the 39th Hawaii International Conference on Systems Sciences*, Kauai, HI, January 4-7, 2006.
10. S. Weisband, S. M. B. Thatcher, & **J. Xu**, "Using Bibliometric Analysis to Evaluate Scientific Progress in Virtual Teams Research," in *Proceedings of the 65th Academy of Management Annual Meeting*, Honolulu, HI, August 5-10, 2005.
11. J. Qin, **J. Xu**, D. Hu, M. Sageman, & H. Chen, "Analyzing Terrorist Networks: A Case Study of the Global Salafi Jihad Network," in *Proceedings of the 3rd NSF/NIJ Symposium on Intelligence and Security Informatics (ISI'05)*, Atlanta, GA, May 19-20, 2005.
12. **J. Xu**, "Criminal Relation Exploration Tool for Law Enforcement Knowledge Management," in *Proceedings of Americas Conference on Information Systems (AMCIS'04)*, New York, NY, August 6-8, 2004.
13. **J. Xu**, B. Marshall, S. Kaza, & H. Chen, "Analyzing and Visualizing Criminal Network Dynamics: A Case Study," in *Proceedings of the 2nd NSF/NIJ Symposium on Intelligence and Security Informatics (ISI'04)*, Tucson, AZ, June 10-11, 2004.
14. Z. Huang, H. Chen, F. Guo, **J. Xu**, S. Wu, & W-H. Chen, "Visualizing the Expertise Space," in *Proceedings of the 37th Hawaii International Conference on System Science (HICSS 37)*, Big Island, Hawaii, January 5-8, 2004.
15. **J. Xu** & H. Chen, "Untangling Criminal Networks: A Case Study," in *Proceedings of the 1st NSF/NIJ Symposium on Intelligence and Security Informatics (ISI'03)*, Tucson, AZ, June 2-4, 2003.
16. J. Schroeder, **J. Xu**, & H. Chen, "CrimeLink Explorer: Using Domain Knowledge to Facilitate Automated Crime Association Analysis," in *Proceedings of the 1st NSF/NIJ Symposium on Intelligence and Security Informatics (ISI'03)*, Tucson, AZ, June 2-4, 2003.
17. G. Leroy, H. Chen, J. Martinez, S. Eggers, R. Falsey, K. Kislin, Z. Huang, J. Li, **J. Xu**, D. McDonald, & G. Ng. "Genescene: Biomedical Text and Data Mining," In *Proceedings of the 3rd ACM/IEEE Joint Conference on Digital Libraries (JCDL '03)*, Houston, TX, May 27-31, 2003.
18. H. Chen, W. Chung, Y. Qin, M. Chau, **J. Xu**, G. Wang, R. Zheng, & H. Atabakhsh, "Crime Data Mining: An Overview and Case Studies," in *Proceedings of the 3rd National*

- Conference for Digital Government Research (dg.o 2003)*, Boston, MA, May 18-21, 2003.
19. **J. Xu** & H. Chen, "Using Shortest Path Algorithms to Identify Criminal Associations," in *Proceedings of the 2nd National Conference for Digital Government Research (dg.o 2002)*, Los Angeles, CA, May 19-22, 2002.
 20. M. Chau, **J. Xu**, & H. Chen, "Extracting Meaningful Entities from Police Narrative Reports," in *Proceedings of the 2nd National Conference for Digital Government Research (dg.o 2002)*, Los Angeles, CA, May 19-22, 2002.
 21. W. Mayer & **J. Xu**, "A Two-Step Semiparametric Estimator for Switching Regression Models," in *Proceedings of North American Conference of the Econometric Society*, Madison, WI, 1999.

BOOK CHAPTERS

1. D. Yates & **J. Xu**, "Sensor Field Resource Management for Sensor Network Data Mining," in A. Cuzzocrea (Ed.), *Intelligent Techniques for Warehousing and Mining Sensor Network*, accepted for publication, forthcoming.
2. M. Chau & **J. Xu**, "Using Web Mining and Social Network Analysis to Study the Emergence of Cyber Communities in Blogs," in H. Chen, E. Reid, J. Sinai, A. Silke, & B. Ganor (Eds), *Terrorism Informatics: Knowledge Management and Data Mining for Homeland Security*, Springer, pp. 473-494, 2008.
3. **J. Xu** & H. Chen, "Understanding the Nexus of Terrorist Web Sites," in H. Chen & C. Yang (Eds), *Intelligence and Security Informatics: Techniques and Applications*, pp. 65-78, 2008.
4. E. Reid, H. Chen, & **J. Xu**, "Social Network Analysis for Terrorism Research," in H. Chen, T.S. Raghu, R. Ramesh, A. Vinze, & D. Zeng (Eds), *National Security: Handbooks in Information Systems*, Vol. 2, pp. 243-270, 2007.
5. D. M. McDonald, H. Su, **J. Xu**, C.-J. Tseng, H. Chen, & G. Leroy, "Gene Pathway Text Mining and Visualization," in H. Chen, S. Fuller, C. Friedman & W. Hersh (Eds.), *Medical Informatics: Knowledge Management and Data Mining in Biomedicine*, pp. 519-546, 2005.

INVITED TALKS AND PRESENTATIONS

1. "The Social Identity of IS: Analyzing the Collaboration Network of the ICIS Conferences (1980-2005)," presented at *the International Conference on Information Systems (ICIS 2006)*, Milwaukee, WI, December 2006.
2. "The Topology of Dark Networks," presented at School of Management, Boston University, February 2006.
3. "Using Social Contextual Information to Match Criminal Identities," presented at *the 39th Hawaii International Conference on Systems Sciences*, Kauai, HI, January 2006.
4. "Criminal Relation Exploration Tool for Law Enforcement Knowledge Management," presented at *Americas Conference on Information Systems (AMCIS'04)*, New York, NY, August 2004.
5. "Analyzing and Visualizing Criminal Network Dynamics: A Case Study," presented at *the 2nd NSF/NIJ Symposium on Intelligence and Security Informatics (ISI'04)*, Tucson, AZ, June 2004.

6. “Untangling Criminal Networks: A Case Study,” presented at *the 1st NSF/NIJ Symposium on Intelligence and Security Informatics (ISI’03)*, Tucson, AZ, June 2003.
7. “CrimeLink Explorer: Using Domain Knowledge to Facilitate Automated Crime Association Analysis,” presented at *the 1st NSF/NIJ Symposium on Intelligence and Security Informatics (ISI’03)*, Tucson, AZ, June 2003.
8. “Using Shortest Path Algorithms to Identify Criminal Associations,” presented at *the 2nd National Conference for Digital Government Research (dg.o 2002)*, Los Angeles, CA, May 2002.

HONORS AND AWARDS

NSF Grant (Co-PI), “Software for Real-World Systems (SRS): Design and Evaluation Methodologies for Enhancing ERP System Usability,” \$400,000, 2008-2011
 Faculty Research Summer Grant, Bentley College, 2005-present
Outstanding Scholarly Contribution Award, Bentley College, 2008
Research Publication Award, Bentley College, 2007
Best Paper Award on the 10th *Pacific Asia Conference on Information Systems*, Malaysia, July 6-9, 2006
James LaSalle Outstanding Graduate Student Instructor Award, University of Arizona, 2004
 Graduate In-state Tuition Scholarship, University of Arizona, 2001-2005
 Tuition Scholarship and Graduate Assistantship, University of Arizona, 2000-2005
 Tuition Scholarship and Graduate Assistantship, University of Mississippi, 1997-2000
 Renmin Fellowship, Beijing Institute of Technology, Beijing, China, 1991-1995

PROFESSIONAL ACTIVITIES

Member of the *IEEE Computer Society*
 Member of the *Association for Information Systems*

Reviewer for Journals:

Communications of the ACM (CACM), *Decision Support Systems (DSS)*, *Journal of Database Management (JDM)*, *Information Systems Management (ISM)*, *ACM Transactions on Information Systems (TOIS)*, *IEEE Transactions on Systems, Man and Cybernetics (IEEE SMC)*, *IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE)*, *IEEE Intelligent Systems*, *Journal of the American Society for Information Science and Technology (JASIST)*, *Journal of Strategic Information Systems (JSIS)*, *International Journal of e-Collaboration (IJeC)*, *International Journal of Human-Computer Studies (IJHCS)*, *Journal of Intelligent Information Systems*, *Information Sciences*, *The DATA BASE for Advances in Information Systems*

Program Committee Member for Conferences:

Pacific Asia Workshop on Intelligence and Security Informatics (2007-2009), *IEEE International Conference on Intelligence and Security Informatics* (IEEE ISI 2006-2009), *International Conference on Advanced in Social Network Analysis and Data Mining* (ASONAM 2009-2010)

Reviewer for Conferences:

International Conference on Information Systems (ICIS), Americas Conference on Information Systems (AMCIS), Europe Conference on Information Systems (ECIS), Pacific Asia Conference on Information System (PACIS), ACM/IEEE Joint Conference on Digital Libraries, National Conference for Digital Government Research, NSF/NIJ Symposium on Intelligence and Security Informatics, IEEE/WIC International Conference on Web Intelligence, European Conference on Research and Advanced Technology for Digital Libraries, International Conference on Asian Digital Libraries, International Symposium on Collaborative Information Visualization Environments, China Digital Library Conference, National Conference for Digital Government Research

Reviewer for the National Science Foundation proposals:

III-COR (2007), CAREER (2006)

Co-PI/Author of NSF Grant Proposals:

Co-PI: "Software for Real-World Systems (SRS): Design and Evaluation Methodologies for Enhancing ERP System Usability," \$400,000, 2008-2011

Co-PI: "HCC: Collaborative Research: Assessing the Success, Quality, Innovation, and Value of Knowledge Communities," 2006

Co-PI: "Information Security Risk Implications from Emerging Use of Electronic Health Records," 2006

Author: "ITR: COPLINK Center for Intelligence and Security Informatics Research—A Crime Data Mining Approach to Developing 'Border Safe' Research," \$700,000, 2003-2005

Author: "COPLINK Center: Social Network Analysis and Identity Deception Detection for Law Enforcement and Homeland Security," \$600,000, 2004-2007.

TECHNICAL SKILLS

Programming Languages:	Java, C, C++, VB, Pascal, Prolog
Operating Systems:	Unix, Linux, Windows 9x, Windows NT
Databases:	Oracle, SQLServer, DB2
Internet Technologies:	HTML, CGI, Applet, Servlet, JSP, ASP

REFERENCES

Dr. Douglas Robertson, Chair
 Department of Computer Information Systems, Bentley College, Waltham, MA 02452
 Email: mrobert@bentley.edu
 Phone: +1 (781) 891-2175

Dr. M. Lynne Markus
 Professor of Information and Process Management, Bentley College, Waltham, MA 02452
 Email: mlmarkus@bentley.edu
 Phone: +1 (781) 891-2312

Dr. Hsinchun Chen, McClelland Endowed Professor

Department of Management Information Systems, University of Arizona, Tucson, AZ 85721
Email: hchen@eller.arizona.edu
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