Xiao Fang

Alfred Lerner College of Business and Economics
University of Delaware
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EDUCATION

1998–2003	**Ph.D.** in Management Information Systems Minor in Computer Science University of Arizona, Tucson, Arizona
1996	**B.S.** (1993) **M.S.** (1996) in Management Information Systems Fudan University, Shanghai, China

EXPERIENCE

University of Delaware
Lerner College of Business and Economics &
Institute for Financial Services Analytics

Professor with Tenure, 2018 –

JPMorgan Chase Senior Fellow, 2019 –

JPMorgan Chase Fellow, 2015 – 2019

Associate Professor with Tenure, 2015 – 2018

Founding Council Member, Data Science Institute, 2018 –

Affiliated Faculty, Department of Electrical and Computer Engineering,
College of Engineering, 2015 –

Affiliated Faculty, Department of Computer and Information Sciences,
College of Engineering, 2015 –

University of Utah
David Eccles School of Business

Associate Professor with Tenure, 2014 – 2015

David Eccles Emerging Scholar, 2013 – 2015

Assistant Professor, 2009 – 2014

University of Toledo
College of Business Administration

Associate Professor with Tenure, June 2009

Assistant Professor, 2003 – 2009

IBM Silicon Valley Lab, San Jose, CA

Research Intern, May 2001 – August 2001

RESEARCH

Research Interests

    Method Area: Machine Learning, Optimization

    Applied Area: Financial Technology, Social Network Analytics, Health Care Analytics

Publications in Refereed Journals (*: corresponding author)

1. Zhang, H., Zhao, X., **Fang, X.***, and Chen, B. Proactive Resource Request for Disaster Response: A Deep Learning-based Optimization Model. Accepted by ***Information Systems Research***.

2. Yin, K. **Fang, X.***, Chen, B., and Liu Sheng, O. R. Diversity Preference-Aware Link Recommendation for Online Social Networks. Accepted by ***Information Systems Research***.

3. Xu, D., Hu, P., and **Fang, X.** 2023 A Deep Learning-based Imputation Method to Enhance Crowd-sourced Data for Online Business Directory Platforms. ***Journal of Management Information Systems***, 40 (2), pp. 624-654.

4. Zhao, X., **Fang, X.***, He, J., and Huang, L. 2023. Exploiting Expert Knowledge for Assigning Firms to Industries: A Novel Deep Learning Method. ***MIS Quarterly***, 47 (3), pp.1147-1176.

5. Xie, J., Liu, X., Zeng, D., **Fang, X.** 2022. Discovering Reasons for Medication Nonadherence from Social Media: A Sentiment-Enriched Deep Learning Approach. ***MIS Quarterly***, 46 (1), pp. 341-372.

6. Lin, Y. and **Fang, X.** 2021. First, Do No Harm: Predictive Analytics to Reduce In-Hospital Adverse Events. ***Journal of Management Information Systems***, 38 (4), pp. 1122-1149.

7. **Fang, X.**, Gao, Y., Hu, P. 2021. A Prescriptive Analytics Method for Cost Reduction in Clinical Decision Making. ***MIS Quarterly***, 45 (1), pp. 83-115.

8. Zhang, H., Zhao, X., Yin, K., Yan, Y., Chen, B., Qian, W. and **Fang, X.*** 2021. Dynamic Estimation of Epidemiological Parameters of COVID-19 Outbreak and Effects of Interventions on Its Spread. ***Journal of Public Health Research***, 10 (1).

9. Xu, D., Hu, P., Huang, T., **Fang, X.**, Hsu, C., 2020. A Deep Learning-Based Unsupervised Method to Impute Missing Values in Electronic Health Records for Improved Patient Care and Management. ***Journal of Biomedical Informatics*** 111, article 103576.

10. He, J., **Fang, X.***, Liu, H., Li, X. 2019. Mobile App Recommendation: An Involvement-Enhanced Approach. ***MIS Quarterly*** 43 (3), pp. 827-849.

11. **Fang, X.**, and Hu, P. 2018. Top Persuader Prediction for Social Networks. ***MIS Quarterly*** 42 (1), pp. 63-82.

12. Li, Z., **Fang, X.***, and O. R. Liu Sheng. 2018. A Survey of Link Recommendation for Social Networks: Methods, Theoretical Foundations, and Future Directions. ***ACM Transactions on Management Information Systems*** 9 (1) Lead Article.

13. Hu, P., Hu, H., and **Fang, X.** 2017. Examining the Mediating Roles of Cognitive Load and Performance Outcomes in User Satisfaction with a Website: A Quasi-Field Experiment. ***MIS Quarterly*** 41 (3), pp. 975-987.

14. Li, Z.†, **Fang, X.***†, Bai, X. and O. R. Liu Sheng. 2017. Utility-based Link Recommendation for Online Social Networks. ***Management Science***, 63(6), pp. 1938-1952. (†: Equal contribution).

15. **Fang, X.**, Liu Sheng, O. R., and P. Goes. 2013. When Is the Right Time to Refresh Knowledge Discovered from Data? ***Operations Research***, 61(1), pp. 32-44.

16. **Fang, X.**, Hu, P., Li., Z., and W. Tsai. 2013. Predicting Adoption Probabilities in Social Networks. ***Information Systems Research***, 24(1), pp. 128-145.

17. **Fang, X.** 2013. Inference-based Naïve Bayes: Turning Naïve Bayes Cost-sensitive. *IEEE Transactions on Knowledge and Data Engineering*, 25(10), pp. 2302-2313.

18. **Fang, X.**, Hu, P., Chau, M., Hu, H., Yang, Z. and Liu Sheng, O. R. 2012. A Data-driven Approach to Measure Website Navigability. *Journal of Management Information Systems*, 29(2), pp. 173-212.

19. Sundararaghavan, P. S., Kunnathur, A., and **Fang, X.** 2010. Sequencing Questions to Ferret out Terrorists: Models and Heuristics. *Omega*, 38(1-2), pp. 12-19.

20. Lu, Y., Chau, M., **Fang, X.**, and Yang, C. C. 2009. Characteristics of Character Usage in Chinese Web Searching. *Information Processing and Management*, 45(1), pp. 115-130.

21. **Fang, X.**, and Rachamadugu, R. 2009. Policies for Knowledge Refreshing in Databases. *Omega*, 37(1), pp. 16-28.

22. Zhang, J., **Fang, X.**, and Liu Sheng, O. R. 2007. Online Consumer Search Depth: Theory and New Findings. *Journal of Management Information Systems*, 23(3), pp. 71-95.

23. Chau, M., **Fang, X.**, and Yang, C. C. 2007. Web Searching in Chinese: A Study of a Search Engine in Hong Kong. *Journal of the American Society for Information Science and Technology*, 58(7), pp. 1044-1054.

24. Chau, M., **Fang, X.**, and Liu Sheng, O. R. 2007. What Are People Searching on Government Web Sites? A Study of Utah.gov. *Communications of the ACM*, 50(4), pp. 87-92.

25. **Fang, X.**, Chau, M., and Liu Sheng, O. R. 2007. ServiceFinder: A Method Towards Enhancing E-service Portals. *ACM Transactions on Information Systems*, 25(4) Article 17.

26. **Fang, X.**, Liu Sheng, O. R., Gao, W., and Iyer, B. 2006. A Data Mining Based Prefetching Approach to Caching For Network Storage Systems. *INFORMS Journal on Computing*, 18(2), pp. 267-282.

27. Chau, M., **Fang, X.**, and Liu Sheng, O. R. 2005. Analyzing the Query Logs of a Website Search Engine. *Journal of the American Society for Information Science and Technology*, 56(13), pp. 1363 – 1376.

28. **Fang, X.**, and Liu Sheng, O. R. 2004. LinkSelector: A Web Mining Approach to Hyperlink Selection for Web Portals. *ACM Transactions on Internet Technology*, 4(2), pp. 209-237.

Journal Editorial

1. Padmanabhan, B., **Fang, X.**, Sahoo, N., Burton-Jones, A. 2022. Editor's Comments: Machine Learning in Information Systems Research. *MIS Quarterly*, 46(1), pp. III-XVIII.

Refereed Book Chapters

1. Chau, M., Lu, Y., **Fang, X.**, and Yang, C. C. 2008. Processing and Analysis of Search Query Logs in Chinese. In B. J. Jansen, A. Spink & I. Itaksa (Eds.), *Handbook of Web Log Analysis*. Hershey, PA: IGI.

Refereed Conference Presentations

1. Wu H., Zhang H., Li L., Chen Z., Zhu F. and **Fang X.** 2022. Cheaper Is Better: Exploring Price Competitiveness for Online Purchase Prediction. *38th IEEE International Conference on Data Engineering (ICDE 2022), Kuala Lumpur, Malaysia*.

2. Xie, J., Zhao, X., Liu, X., and **Fang, X.** 2022. Care for the Mind Amid Chronic Diseases: An Interpretable AI Approach Using IoT. *INFORMS Workshop on Data Science 2022 (DS 2022), Indianapolis, IN*.

3. Zhang, H. and **Fang, X.** 2021. Privacy-Preserving Credit Risk Prediction with Alternative Data. *31st Workshop on Information Technology and Systems (WITS 2021), Austin, Texas*.

4. Zhang, H., Qian, W., and **Fang, X.** 2019. Latent Network-Enhanced Predictive Analytics. *29th Workshop on Information Technology and Systems (WITS 2019), Munich, Germany*.

5. **Fang, X.**, Zhao, X., He, J., and Liu Sheng, O. R. 2019. A Deep Learning Approach to Industry Classification. *INFORMS Workshop on Data Science 2019 (DS 2019), Seattle, WA*. **Best Paper Award**

6. Yin, K. **Fang, X.**, and Chen, B. 2019. Diversity Preference-Aware Link Recommendation for Online Social Networks. *INFORMS Workshop on Data Science 2019 (DS 2019), Seattle, WA*.

7. Zhang, H., Qian, W., and **Fang, X.** 2019. Latent Network-Enhanced Predictive Analytics. *INFORMS Workshop on Data Science 2019 (DS 2019), Seattle, WA*.

8. Xu, D, **Fang, X.**, Hu, P. 2018. I Know Where You Are: A Deep Learning Approach to Predict Location for Personalized Mobile Targeting. *28th Workshop on Information Technology and Systems (WITS 2018), Santa Clara, CA*.

9. Xie, J., Liu, X., Zeng, D. and **Fang, X.** 2018. Discovering Medication Nonadherence Reasons with Sentiment-Enriched Deep Learning Approach. *INFORMS Workshop on Data Science 2018 (DS 2018), Phoenix, AZ*.

10. Li, Z., Ge, Y., **Fang, X.** 2018. Link Prediction from Incomplete Data. *China Summer Workshop on Information Management 2018 (CSWIM 2018)*.

11. Li, Y., and **Fang, X.** 2017. First, Do No Harm: Predictive Analytics for Risks of In-Hospital Adverse Events. *INFORMS Workshop on Data Science 2017 (DS 2017), Houston, TX*.

12. Xie, J., Liu, X., Zeng, D. **Fang, X.** 2017. Understanding Reasons for Medication Nonadherence: An Exploration in Social Media Using Sentiment-Enriched Deep Learning Approach. *36th International Conference on Information Systems (ICIS 2017): Data Science Track, Seoul, Korea*.

13. **Fang, X.** 2008. Optimal Knowledge Refreshing Policies. *Northeast Decision Science Institute 2008 Annual Meeting, New York, NY*. (Best Research Paper Award)

14. **Fang, X.**, Chau, M., Hu, P., Yang, Z. and Liu Sheng, O. R. 2006. Web-Mining-Based Objective Metrics for Measuring Website Navigability. *27th International Conference on Information Systems (ICIS 2006): Design Science Track, Milwaukee, Wisconsin*.

15. Lu, Y., Chau, M., **Fang, X.**, and Yang, C. C. Analysis of the Bilingual Queries in a Chinese Web Search Engine. *Fifth Workshop on E-Business (WEB 2006), Milwaukee, Wisconsin*.

16. Lu, Y., Chau, M., and **Fang, X.** 2006. Mining the Query Logs of a Chinese Web Search Engine for Character Usage Analysis. *Pacific Asia Conference on Information Systems (PACIS 2006), Kuala Lumpur, Malaysia*.

17. **Fang, X.**, and Liu Sheng, O. R. 2005. Designing a Better Web Portal for Digital Government: a Web-mining Based Approach. *2005 National Conference on Digital Government Research, DG.O 2005, Atlanta, Georgia*.

18. **Fang, X.**, Liu Sheng, O. R., Iyer, B., and Gao, W. 2001. NetShark – A Caching Based Geographically Distributed Network Storage System. *11th Workshop on Information Technology and Systems (WITS 2001), New Orleans, Louisiana*. (Best Paper Nominee)

19. **Fang, X.**, and Liu Sheng, O. R. 2000. A Monitoring Algorithm for Incremental Association Rule Mining. *10th Workshop on Information Technology and Systems (WITS 2000), Brisbane, Australia*.

TEACHING

Doctoral Level

FSAN 831, Data Science.

FSAN 850, Social Network Analytics.

MBA/Master Level

MISY 631, Data Mining for Business Analytics.

Undergraduate Level

MISY 330, Database Design and Implementation.

Executive Education

Data Mining for Business Analytics. (Taught at JPMorgan Chase)

PROFESSIONAL SERVICE

Editorial Board

Associate Editor, *INFORMS Journal on Data Science*, 2022 –

Guest Associate Editor, *Information Systems Research*, 2022

Guest Associate Editor, *Management Science*, 2022

Associate Editor, *Information Systems Research* Special Issue on Disaster Management, 2021–2023

Associate Editor, *MIS Quarterly*, 2017 – 2021.

Editor Board Member, *Journal of Business Analytics*, 2018 –

Associate Editor, *Service Science* (INFORMS Journal), 2020 –

Guest Editor, *ACM Transactions on MIS* Special Issue for WITS 2018, 2019.

Associate Editor, *Decision Sciences*, 2015 – 2017

Associate Editor, *Information and Management*, 2013 – 2015

Conference Organization

Founding Co-Chair, INFORMS Workshop on Data Science, 2017.

Review Co-Chair, Workshop on Information Technologies and Systems (WITS), 2018.

Co-Chair, Utah Winter Conference on Business Analytics, 2020.

Co-Chair, Data Science and Business Analytics Track, International Conference on Information Systems (ICIS), 2016.

Co-Chair, Utah Winter Conference on Business Intelligence, 2014, 2015.

Co-Chair, China Summer Workshop on Information Management (CSWIM), 2015.

Associate Editor, International Conference on Information Systems (ICIS), 2009, 2011, 2020, 2021.

Mentor, MIS Quarterly Scholarly Development Academy, 2022.

Mentor, Doctoral Consortium, Americas Conference on Information Systems, 2020.

Mentor, MIS Quarterly Author Development Workshop, 2020, 2021.

Mentor, MIS Quarterly Reviewer Development Workshop, 2016, 2018, 2019, 2020.

Committee Member, Utah Winter Conference on Business Analytics, 2019.

Organizing Committee Member and Session Chair, Utah Winter Conference on Business Intelligence, 2010–2013.

Track Co-chair, Pacific Asia Conference on Information Systems (PACIS), 2010, 2011.

Committee Member, Workshop on Information Technologies and Systems (WITS), 2005–2015.

Session Chair, Workshop on Information Technologies and Systems (WITS), 2010.

Committee Member, International Conference on Electronic Commerce (ICEC), 2009, 2014.

Organizing Committee Member and Session Chair, Workshop on E-Business (WEB), 2005– 2007.

Committee Member and Session Chair, Workshop on E-Business (WEB), 2008.

Committee Member, China Summer Workshop on Information Management (CSWIM), 2007, 2008.

Committee Member, Taiwan Summer Workshop on Information Management (TSWIM), 2016.

Committee Member, IEEE 2006 TENCON Conference, 2006

HONORS AND AWARDS

Outstanding Associate Editor, MIS Quarterly, 2021.

Co-led a Team Competing in the $1.65 Million Prize AI Challenge Organized by the U.S. Centers for Medicare and Medicaid Services, 2019–2020

- Our team advanced to seven finalists out of 330 teams from Columbia, U of Penn, Mayo Clinic, IBM etc.
- I led the design and implementation of the core deep learning algorithms
- The team is formed by my research group and Jefferson Health Data Science group

Best Paper Award, INFORMS Workshop on Data Science, 2019.

Lerner College Outstanding Scholar Award, University of Delaware, 2017.

Accounting and MIS Department Excellence in Research Award, University of Delaware, 2017.

INFORMS ISS Design Science Award, 2017.

JPMorgan Chase Fellow, 2015 –

David Eccles Emerging Scholar, University of Utah, 2013 – 2015.

University Incentive Seed Grant, University of Utah, 2012.

Outstanding Faculty, presented by the students of Operations and Information Systems, University of Utah, 2011.

Most Influential Teacher, recognized by the Master of IS program, University of Utah, 2010.

Outstanding Junior Researcher, College of Business Administration, University of Toledo, 2008.

Robert Pearson Memorial Award for the Best Contribution to Theory, Northeast Decision Science Institute, 2008.

University Summer Research Awards and Fellowships, University of Toledo, 2007.

IBM Ph.D. Fellowship, 2001 – 2003.

Best Paper Nominee, Workshop on Information Technology and Systems (WITS), 2001.

DOCTORAL STUDENTS SUPERVISED

As Chair

1. Zhepeng (Lionel) Li, Co-Chaired with Professor Olivia Sheng, University of Utah, defended August 2013.
   - Placement: Assistant Professor, Schulich School of Business, York University, Canada
   - Current: Associate Professor, HKU Business School, University of Hong Kong

2. Xiaohang Zhao, University of Delaware, Financial Services Analytics (FSAN) Program, defended April 2021.
   - Placement: Assistant Professor, Shanghai University of Finance and Economics, China
   - Current: Assistant Professor, Shanghai University of Finance and Economics, China

3. Kexin Yin, University of Delaware, FSAN Program, defended April 2022.
   - Placement: Senior Associate Data Scientist, Credit Risk Modeling, JPMorgan Chase.

4. Hongzhe Zhang, University of Delaware, FSAN Program, defended June 2023.
   - Placement: Assistant Professor, Chinese University of Hong Kong, Shenzhen, China
   - Current: Assistant Professor, Chinese University of Hong Kong, Shenzhen, China