

AMIN VAHEDIAN KHEZERLOU

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EDUCATION

The University of Iowa, Iowa City, IA, USA.

Ph.D. in Information Systems.

Expected Spring 2019

Dissertation Title: “Mining Big Mobility Data for Large Urban Event Analytics”.

Advisor: Dr. Xun Zhou.

K.N. Toosi University of Technology, Tehran, Iran.

M.S. in Information Technology.

2013

The University of Tabriz, Tabriz, East Azerbaijan, Iran.

B.E. in Information Technology.

2011

RESEARCH INTERESTS

Data Mining, Spatio-Temporal Data Analytics, Event Detection and Prediction, Urban Big Data Analytics: development of techniques and frameworks that facilitate urban sustainability and growth through advanced data analytics.

RESEARCH EXPERIENCE

Research Assistant.

Department of Management Sciences, University of Iowa.

2016-Present

Urban Events Analytics

- Early Detection of Gathering Events, Using Traffic Flows.
- Forecasting Gathering Events, Using Big Trajectory Data.
- Predicting Urban Dispersal Events, Using Survival Analysis Formulation and Deep Learning Methods.

Taxi Revenue Optimization

- Recommending Passenger Seeking Routes to Drivers, Using Markov Decision Process.

Traffic Congestion Prediction

- Formulation of Traffic Congestion Patterns and Prediction of Congestion Propagation Paths.

Business Location Patterns

- Analysis of Business Co-Location Patterns in Urban Setting, Using Point of Interest Data.

Graduate Student Researcher.

Department of Information Technology, K.N. Toosi University of Technology.

2011-2013

- Discovering Process Trees, Using Metaheuristic Methods.

AWARDS AND HONORS

AAAI Student Travel Award.

Association for Advancement of Artificial Intelligence, USA.

2019

Student Travel Award..

Graduate College, University of Iowa.

2019

Ballard & Seashore Dissertation Year Fellowship.

Graduate College, University of Iowa.

2018

Summer Research Fellowship.
Graduate College, University of Iowa. 2018

NSF Student Travel Award.
National Science Foundation, USA. 2017

Post-Comprehensive Research Fellowship.
Graduate College, University of Iowa. 2017

NSF Student Travel Award.
National Science Foundation, USA. 2016

Tuition Scholarship for Graduate Students.
Ministry of Science, Research and Technology, Iran. 2011

Tuition Scholarship for Undergraduate Students.
Ministry of Science, Research and Technology, Iran. 2006

JOURNAL ARTICLES

Zhou, X., Rong, H., Yang, C., Zhang, Q., **Khezerlou, A.V.**, Zheng, H., Shafiq, Z., Liu, A.X. (2018). Optimizing Taxi Driver Profit Efficiency: A Spatial Network-based Markov Decision Process Approach. *IEEE Transactions on Big Data (TBD)*. Accepted.

Khezerlou, A. V., Zhou, X., Li, L., Shafiq, Z., Liu, A. X., & Zhang, F. (2017). A traffic flow approach to early detection of gathering events: Comprehensive results. *ACM Transactions on Intelligent Systems and Technology (TIST)*, 8(6), 74.

Khezerlou, A. V., & Alizadeh, S. (2014). A new model for discovering process trees from event logs. *Applied intelligence*, 41(3), 725-735.

PEER-REVIEWED CONFERENCE AND WORKSHOP ARTICLES

Zhou, X., **Khezerlou, A. V.**, Liu, A., Shafiq, Z., & Zhang, F. (2016, October). A traffic flow approach to early detection of gathering events. In *Proceedings of the 24th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems* (p. 4). ACM.

Vahedian, A., Zhou, X., Tong, L., Li, Y., & Luo, J. (2017, November). Forecasting gathering events through continuous destination prediction on big trajectory data. In *Proceedings of the 25th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems* (p. 34). ACM.

Xiong, H., **Vahedian, A.**, Zhou, X., Li, Y., & Luo, J. (Accepted, 2018). Predicting Traffic Congestion Propagation Patterns: A Propagation Graph Approach. In *11th ACM SIGSPATIAL International Workshop on Computational Transportation Science (IWCTS'18)*, November 6, 2018, Seattle, WA, USA.

Chiu, J., **Vahedian, A.** & Zhou, X. (Accepted, 2018). Understanding Business Location Choice Pattern: A Co-Location Analysis on Urban POI Data. In *2nd INFORMS Workshop on Data Science*, November 3, 2018, Phoenix, AZ, USA.

Vahedian, A., Zhou, X., Tong, L., Street, W.N. & Li, Y. (2019). Predicting Urban Dispersal Events: A Two-Stage Framework through Deep Survival Analysis on Mobility Data. In *2019 AAAI Conference on Artificial Intelligence (AAAI'19)*, January 27, 2019, Honolulu, HI, USA (Accepted).

ARTICLES UNDER REVIEW AND WORKING PAPERS

Vahedian, A., Zhou, X., Tong, L., Li, Y., & Luo, J. (2nd Revision, Nov. 2018). Forecasting Gathering Events through Trajectory Destination Prediction: a Dynamic Hybrid Model. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*.

PRESENTATIONS

(2019, January) “*Predicting Urban Dispersal Events: A Two-Stage Framework through Deep Survival Analysis on Mobility Data*”. 2019 AAAI Conference on Artificial Intelligence (AAAI’19), January 27, 2019, Honolulu, HI, USA.

(2018, November) “*Predicting Urban Dispersal Events: A Two-Stage Framework through Deep Survival Analysis on Mobility Data*”. INFORMS Annual Meeting 2018, Institute for Operations Research and the Management Sciences, Phoenix, Arizona.

(2017, November) “*Forecasting Gathering Events through Continuous Destination Prediction on Big Trajectory Data*”. 25th International Conference on Advances in Geographic Information Systems (SIGSPATIAL GIS’17), ACM, Los Angeles, California.

(2017, October) “*Forecasting Gathering Events through Continuous Destination Prediction on Big Trajectory Data*”. INFORMS Annual Meeting 2017, Institute for Operations Research and the Management Sciences, Houston, Texas.

(2016, November) “*A Traffic Flow Approach to Early Detection of Gathering Events*”. INFORMS Annual Meeting 2016, Institute for Operations Research and the Management Sciences, Nashville, Tennessee.

(2015, November) “*A Data Mining Approach to the Discovery of Emerging Hotspot Patterns in Urban Data*”. INFORMS Annual Meeting 2015, Institute for Operations Research and the Management Sciences, Philadelphia, Pennsylvania.

PROFESSIONAL SERVICE

Reviewer

- Decision Sciences.
- Big Data and Cognitive Computing
- INFORMS Workshop on Data Science 2018

Co-Reviewer

- Entropy.
- ACM SIGSPATIAL’18
- IEEE ICDM 2018
- CIKM 2018
- AAAI 2019
- ACM SIGSPATIAL’17
- IEEE ICDM 2017
- ICTAI 2017
- CIKM 2017

Social Media Director of INFORMS Student Chapter at the University of Iowa. *2016-2017*

Organizer of Data Mining at Iowa Group (DMIG), University of Iowa. *2016-2017*

TEACHING AND MENTORING EXPERIENCE

Head Teaching Assistant, Information Systems *Fall 2015 - Fall 2016*

- Assisted in coordination of all TA tasks, such as assignment of TAs to lab sections, in a 500+ students course with 15+ lab sections.
- Assisted in preparing course assignments and grading guidelines.
- Handled all special cases, such as plagiarism, grading issues, disability accommodations, etc.
- Taught one or two lab sections.

Teaching Assistant, Information Systems *Spring 2015*

- Taught basic data analysis, using spreadsheets (MS Excel).
- Taught basic database development, using MS Access.

Graduate Mentor, Undergraduate Thesis in Business Analytics *Spring 2018 - Fall 2018*

- Developed a research question in relation to student's area of study and interests.
- Guiding the student through different methodologies and solutions, under the supervision of the student's thesis advisor.
- Guiding the student in writing of the thesis.

Graduate Mentor, Secondary Student Training Program

Summer 2017 and 2018

- Helped mentor two high school students in summers of 2017 and 2018.
- Worked closely with the students to familiarize them with fundamentals of academic research.
- Guided the students in answering a research question and preparing a presentation of their research.

REFERENCES

Xun Zhou, Assistant Professor

Department of Management Sciences
Tippe College of Business, University of Iowa
(319) 384-3335, xun-zhou@uiowa.edu

W. Nick Street, Professor

Department of Management Sciences
Tippe College of Business, University of Iowa
(319) 335-1016, nick-street@uiowa.edu

Yanhua Li, Assistant Professor

Computer Science Department
Worcester Polytechnic Institute
yli15@wpi.edu

Zubair Shafiq, Assistant Professor

Department of Computer Science
University of Iowa
(319) 335-0742, zubair-shafiq@uiowa.edu