Da Yan

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Research Interests

Core Computer Science

- Database and data mining
- Parallel and distributed computing
- Machine learning, especially deep learning
- Algorithm design

Applications & Interdisciplinary Research

- Geospatial data management, GIS, Transportation Engineering
- Bioinformatics, Clinical Informatics
- Network Science
- Analysis of images, videos and natural language

Employment

Associate Professor — Department of Computer Science, Indiana University Bloomington, Bloomington, IN   2024 — now

Associate Professor (Tenured) and Ph.D. Program Director — Department of Computer Science, The University of Alabama at Birmingham, Birmingham, AL   2023

Assistant Professor — Department of Computer Science, The University of Alabama at Birmingham, Birmingham, AL   2016 — 2023

Postdoctoral Fellow — Department of Computer Science & Engineering, The Chinese University of Hong Kong, Sha Tin, New Territories, Hong Kong
<div align="right">2014 — 2016</div>

Education

Ph.D. in Computer Science — The Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong
<div align="right">2009 — 2014</div>

B.S. in Computer Science — Fudan University, Shanghai, China
<div align="right">2005 — 2009</div>

Awards

Award	Year
HKIS-Towngas 2015 Young Scientist Award in Physical/Mathematical Science (Sole Winner)	2015
ICDE 2024 Best Demo Runner-Up Award	2024
Senior Member of ACM	Since 2021
Senior Member of IEEE	Since 2021
Winner of the Radiance Technologies Innovation Bowl ($25,000)	2023
South Big Data Hub's Small S.E.E.D.S Grant	2022
UAB Kevin and Joann Reilly Faculty Award ($2,000)	2021 — 2022
South BD Hub Azure for Research Award ($25,000 Cloud Credits)	2017 — 2018
Google Cloud COVID-19 Research Credit ($5,000 Cloud Credits)	2020 — 2021
Dagstuhl Seminar 19051 - NSF Support Grant for Junior Researchers	2019
ICDE 2013 Student Travel Award	2013
Fudan Excellent Graduate	2009
SCSK Corporation Scholarship	2007 — 2008
Fudan Excellent Undergraduate Scholarship	2005 — 2009

Research

This CV is updated periodically. My latest publications can be found from my [Google Scholar page](#) or [DBLP page](#).

Conference Full Papers

1. Qihao Cheng, Da Yan, Tianhao Wu, Lyuheng Yuan, Ji Cheng, Zhongyi Huang, Yang Zhou, **"Efficient Enumeration of Large Maximal k-Plexes,"** The 28th International Conference on Extending Database Technology (EDBT 2025), Pages 53-65.

2. Yang Xiao, Zijie Zhang, Yuchen Fang, Da YAN, Yang Zhou, Wei-Shinn Ku and Bo Hui, **"Advancing Certified Robustness of Explanation via Gradient Quantization,"** The 25th edition of the ACM International Conference on Information and Knowledge Management (CIKM 2024), accepted and to appear.

3. Ziang Shi, Yang Xiao, Da Yan, Min-Te Sun, Wei-Shinn Ku, Hui Bo, **"BMT-BENCH: A Benchmark Sports Dataset for Video Generation,"** The 2024 IEEE International Conference on Image Processing (ICIP 2024), accepted and to appear.

4. Mirza Tanzim Sami, Da Yan, Saugat Adhikari, Lyuheng Yuan, Jiao Han, Zhe Jiang, Jalal Khalil, Yang Zhou, **"EvaNet: Elevation-Guided Flood Extent Mapping on Earth Imagery,"** The 33rd International Joint Conference on Artificial Intelligence (IJCAI 2024), accepted and to appear.

5. Lyuheng Yuan, Da Yan, Jiao Han, Akhlaque Ahmad, Yang Zhou, Zhe Jiang, **"Faster Depth-First Subgraph Matching on GPUs,"** The 40th IEEE International Conference on Data Engineering (ICDE 2024), accepted and to appear.

6. Lyuheng Yuan, Akhlaque Ahmad, Da Yan, Jiao Han, Saugat Adhikari, Xiaodong Yu, Yang Zhou, **"G2-AIMD: A Memory-Efficient Subgraph-Centric Framework for Efficient Subgraph Search on GPUs,"** The 40th IEEE International Conference on Data Engineering (ICDE 2024), accepted and to appear.

7. Zelin Xu, Tingsong Xiao, Wenchong He, Yu Wang, Zhe Jiang, Shigang Chen, Yiqun Xie, Xiaowei Jia, Da Yan, Yang Zhou, **"Spatial-Logic-Aware Weakly Supervised Learning for Flood Mapping on Earth Imagery,"** The 38th AAAI Conference on Artificial Intelligence (AAAI 2024), Pages 22457-22465.

8. Mostafa Jafarzadehfadaki, Virginia P. Sisiopiku, Furat Salman, Da Yan, Jalal Khalil, Wencui Yang, **"Analysis of Temporal and Spatial Patterns of Shared E-scooter Trips and their Impacts on Traffic Operations in Birmingham, AL,"** The 7th Conference on Sustainable Mobility (CSuM 2024).

9. Akhlaque Ahmad, Lyuheng Yuan, <u>Da Yan</u>, Guimu Guo, Jieyang Chen, Chengcui Zhang, **"Accelerating k-Core Decomposition by a GPU,"** The 39th IEEE International Conference on Data Engineering (**ICDE 2023**), Pages 1818-1831.

10. Kaixin Wang, Cheng Long, <u>Da Yan</u>, Jie Zhang, H. V. Jagadish, **"Reinforcement Learning Enhanced Weighted Sampling for Accurate Subgraph Counting on Fully Dynamic Graph Streams,"** The 39th IEEE International Conference on Data Engineering (**ICDE 2023**), Pages 1084-1097.

11. Jiaxiang Ren, Jiayin Jin, Yang Zhou, Lingjuan Lyu, <u>Da Yan</u>, **"Dimension-independent Certified Neural Network Watermarks via Mollifier Smoothing,"** The 40th International Conference on Machine Learning (**ICML 2023**), Pages 28976-29008.

12. Tianshi Che, Yang Zhou, Zijie Zhang, Lingjuan Lyu, Ji Liu, <u>Da Yan</u>, Dejing Dou, Jun Huan, Jiaxiang Ren, **"Fast Federated Machine Unlearning with Nonlinear Functional Theory,"** The 40th International Conference on Machine Learning (**ICML 2023**), Pages 4241-4268.

13. Bo Hui, Da Yan, Xiaolong Ma, Wei-Shinn Ku, **"Rethinking Graph Lottery Tickets: Graph Sparsity Matters,"** The 11th International Conference on Learning Representations (**ICLR 2023**).

14. Zhe Jiang, Yupu Zhang, Saugat Adhikari, Da Yan, Arpan Man Sainju, Xiaowei Jia, Yiqun Xie, **"Hidden Markov Forest for Terrain-Aware Flood Inundation Mapping on Earth Imagery,"** The 23th SIAM International Conference on Data Mining (SDM 2023), Pages 316-324.

15. Furat Salman, Virginia P. Sisiopiku, Jalal Khalil, Wencui Yang, and Da Yan, **"Operational Impacts of On-Demand Ride-Pooling Service Options in Birmingham, AL,"** Future Transportation 3, no. 2 (2023): 519-534.

16. Tianshi Che, Zijie Zhang, Yang Zhou, Xin Zhao, Ji Liu, Zhe Jiang, <u>Da Yan</u>, Ruoming Jin, and Dejing Dou, **"Federated Fingerprint Learning with Heterogeneous Architectures,"** The 22nd IEEE International Conference on Data Mining (ICDM 2022), Pages 31-40, one of the **best-ranked papers** for KAIS invitation.

17. Jalal Khalil, <u>Da Yan</u>, Lyuheng Yuan, Mostafa Jafarzadehfadaki, Saugat Adhikari, Virginia Sisiopiku, Zhe Jiang, **"Realistic Urban Traffic Simulation with Ride-Hailing Services: A Revisit to Network Kernel Density Estimation,"** The 30th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (SIGSPATIAL 2022), **best paper candidate**.

18. Wenchong He, Marcus Kriby, Zhe Jiang, Yiqun Xie, Xiaowei Jia, <u>Da Yan</u>, Yang Zhou, **"Quantifying and Reducing Registration Uncertainty of Spatial Vector Labels on Earth Imagery,"** The 28th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (**KDD 2022**), Pages 554-564.

19. Da Yan, Md Mashiur Rahman Chowdhury, Guimu Guo, Jalal Khalil, Zhe Jiang, Sushil Prasad, **"Distributed Task-Based Training of Tree Models,"** The 37th IEEE International Conference on Data Engineering (**ICDE 2022**), Pages 2237-2249.

20. Guimu Guo, Da Yan, Lyuheng Yuan, Jalal Khalil, Cheng Long, Zhe Jiang, Yang Zhou, **"Maximal Directed Quasi-Clique Mining,"** The 37th IEEE International Conference on Data Engineering (**ICDE 2022**), Pages 1900-1913.

21. Kaiqiang Yu, Cheng Long, Shengxin Liu, Da Yan, "Efficient Algorithms for Maximal k-Biplex Enumeration" The 2022 International Conference on Management of Data (**SIGMOD 2022**), Pages 860-873.

22. Bo Hui, Da Yan, Haiquan Chen, Wei-Shinn Ku, **"Time-sensitive POI Recommendation by Tensor Completion with Side Information,"** The 37th IEEE International Conference on Data Engineering (**ICDE 2022**), Pages 205-217.

23. Zeru Zhang, Zijie Zhang, Yang Zhou, Lingfei Wu, Sixing Wu, Xiaoying Han, Dejing Dou, Tianshi Che, Da Yan, **"Adversarial Attack against Cross-lingual Knowledge Graph Alignment,"** The 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP 2021), Pages 5320-5337.

24. Jahandad Pirayesh, Haiquan Chen, Xiao Qin, Wei-Shinn Ku, Da Yan, **"MentalSpot: Effective Early Screening for Depression Based on Social Contagion,"** The 30th ACM International Conference on Information and Knowledge Management (CIKM 2021), Pages 1437-1446.

25. Bo Hui, Da Yan, Haiquan Chen, Wei-Shinn Ku, **"TrajNet: A Trajectory-Based Deep Learning Model for Traffic Prediction,"** The 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (**KDD 2021**), Pages 716-724.

26. Zhe Jiang, Wenchong He, Marcus Stephen Kirby, Sultan Asiri, Da Yan, **"Weakly Supervised Spatial Deep Learning based on Imperfect Vector Labels with Registration Errors,"** The 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (**KDD 2021**), Pages 767-775.

27. Xin Zhao, Zeru Zhang, Zijie Zhang, Lingfei Wu, Jiayin Jin, Yang Zhou, Ruoming Jin, Dejing Dou, Da Yan, **"Expressive 1-Lipschitz Neural Networks for Robust Multiple Graph Learning against Adversarial Attacks,"** The 38th International Conference on Machine Learning (**ICML 2021**), Pages 12719-12735.

28. Bo Hui, Haiquan Chen, Da Yan, Wei-Shinn Ku, **"EDGE: Entity-Diffusion Gaussian Ensemble for Interpretable Tweet Geolocation Prediction,"** The 37th IEEE International Conference on Data Engineering (**ICDE 2021**), Pages 1092-1103.

29. Wenchong He, Arpan Man Sainju, Zhe Jiang, <u>Da Yan</u>, "**Deep Neural Network for 3D Surface Segmentation based on Contour Tree Hierarchy**," The 21th SIAM International Conference on Data Mining (SDM 2021), Pages 253-261.

30. Yueen Ma, <u>Da Yan</u>, Cheng Long, D. Rangaprakash and Gopikrishna Deshpande, "**Predicting Autism Spectrum Disorder from Brain Imaging Data by Graph Convolutional Network**," The 2021 International Joint Conference on Neural Networks (IJCNN 2021).

31. <u>Da Yan</u>, Shengbin Wu, Mirza Tanzim Sami, Abdullateef Almudaifer, Zhe Jiang, Haiquan Chen, D. Rangaprakash, Gopikrishna Deshpande, Yueen Ma, "**Improving Brain Dysfunction Prediction by GAN: A Functional-Connectivity Generator Approach**," 2021 IEEE International Conference on Big Data (IEEE BigData 2021), Pages 1514-1522.

32. Xingkun Yin, <u>Da Yan</u>, Abdullateef Almudaifer, Sibo Yan, Yang Zhou, "**Forecasting Stock Prices Using Stock Correlation Graph: A Graph Convolutional Network Approach**," The 2021 International Joint Conference on Neural Networks (IJCNN 2021).

33. <u>Da Yan</u>, Guimu Guo, Md Mashiur Rahman Chowdhury, M. Tamer Ӧzsu, Wei-Shinn Ku, John C.S. Lui, "**G-thinker: A Distributed Framework for Mining Subgraphs in a Big Graph**," The 36th IEEE International Conference on Data Engineering (ICDE 2020), Pages 1369-1380.

34. Arpan Man Sainju, Wenchong He, Zhe Jiang, <u>Da Yan</u>, "**Spatial Classification with Limited Observations Based on Physics-Aware Structural Constraint**," The 34th AAAI Conference on Artificial Intelligence (AAAI 2020), Pages 898-905.

35. Bo Hui, <u>Da Yan</u>, Wei-Shinn Ku and Wenlu Wang, "**Predicting Economic Growth by Region Embedding: A Multigraph Convolutional Network Approach**," The 29th ACM International Conference on Information and Knowledge Management (CIKM 2020), Pages 555-564.

36. Yuechun Gu, <u>Da Yan</u>, Sibo Yan, Zhe Jiang., "**Price Forecast with High-Frequency Finance Data: An Autoregressive Recurrent Neural Network Model with Technical Indicators**," The 29th ACM International Conference on Information and Knowledge Management (CIKM 2020), Pages 2485-2492.

37. Yingzhe Dong, <u>Da Yan</u>, Abdullateef Almudaifer, Sibo Yan, Zhe Jiang, Yang Zhou, "**BELT: A Pipeline for Stock Price Prediction Using News**," 2020 IEEE International Conference on Big Data (IEEE BigData 2020), Pages 1137-1146.

38. Yang Zhou, Jiaxiang Ren, Ruoming Jin, Zijie Zhang, Dejing Dou, <u>Da Yan</u>, "**Unsupervised Multiple Network Alignment with Multinominal GAN and Variational Inference**," 2020 IEEE International Conference on Big Data (IEEE BigData 2020), Pages 868-877.

39. Xingyao Wang, <u>Da Yan</u>, Ke Chen, Yancong Deng, Cheng Long, Kunlin Zhang, Sibo Yan, **"Lane Extraction and Quality Evaluation: A Hough Transform Based Approach,"** The 3rd IEEE Conference on Multimedia Information Processing and Retrieval (MIPR 2020 2020), Pages 7-12.

40. Ramin Goudarzi Karim, Guimu Guo, <u>Da Yan</u>, Carmeliza Navasca, **"Accurate Tensor Decomposition with Simultaneous Rank Approximation for Surveillance Videos,"** The 54th Asilomar Conference on Signals, Systems, and Computers (ACSCC 2020), Pages 842-846.

41. <u>Da Yan</u>, James Cheng, Hongzhi Chen, Cheng Long, Purushotham Bangalore, **"Lightweight Fault Tolerance in Pregel-Like Systems,"** The 48th International Conference on Parallel Processing (ICPP 2019), Article No. 69 Pages 1–10.

42. Yi Yang, <u>Da Yan</u>, Shuigeng Zhou, Guimu Guo, **"Parallel Clique-Like Subgraph Counting and Listing,"** The 38th International Conference on Conceptual Modeling (ER 2019), Pages 484-497.

43. Ji Cheng, <u>Da Yan</u>, Xiaotian Hao, Wilfred Ng, **"Mining Order-Preserving Submatrices Under Data Uncertainty: A Possible-World Approach,"** The 35th IEEE International Conference on Data Engineering (**ICDE 2019**), Pages 1154-1165.

44. Harry Kai-Ho Chan, Cheng Long, <u>Da Yan</u>, Raymond Chi-Wing Wong, **"Fraction-Score: A New Support Measure for Co-location Pattern Mining,"** The 35th IEEE International Conference on Data Engineering (**ICDE 2019**), Pages 1514-1525.

45. Hongzhi Chen, Miao Liu, Yunjian Zhao, Xiao Yan, Da Yan, James Cheng, **"G-Miner: an efficient task-oriented graph mining system,"** The 13th European Conference on Computer Systems (EuroSys 2018), Article No. 32 Pages 1–12.

46. Qizhen Zhang, Hongzhi Chen, <u>Da Yan</u>, James Cheng, Boon Thau Loo, Purushotham V. Bangalore, **"Architectural implications on the performance and cost of graph analytics systems,"** The ACM Symposium on Cloud Computing (SoCC 2017), Pages 40-51.

47. Huanhuan Wu, Yunjian Zhao, James Cheng, **Da Yan**, **"Efficient Processing of Growing Temporal Graphs,"** The 22nd International Conference on Database Systems for Advanced Applications (DASFAA 2017), Pages 387-403.

48. Yi Yang, <u>Da Yan</u>, Huanhuan Wu, James Cheng, Shuigeng Zhou, John C. S. Lui, **"Diversified Temporal Subgraph Pattern Mining,"** The 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD 2016**), Pages 1965-1974.

49. Cheng Chen, Hejun Wu, Dyce Jing Zhao, <u>Da Yan</u>, James Cheng, **"SGraph: A Distributed Streaming System for Processing Big Graphs,"** The 2nd International Conference on Big Data Computing and Communications (BIGCOM 2016), Pages 285-294.

50. <u>Da Yan</u>, James Cheng, Yi Lu, Wilfred Ng, **"Effective Techniques for Message Reduction and Load Balancing in Distributed Graph Computation**," The 24th International Conference on World Wide Web (WWW 2015), Pages 1307-1317.

51. Huanhuan Wu, James Cheng, Yi Lu, Yiping Ke, Yuzhen Huang, <u>Da Yan</u>, Hejun Wu, **"Core decomposition in large temporal graphs**," 2015 IEEE International Conference on Big Data (IEEE BigData 2015), Pages 649-658.

52. <u>Da Yan</u>, James Cheng, Wilfred Ng, Steven Liu, **"Finding distance-preserving subgraphs in large road networks**," The 29th IEEE International Conference on Data Engineering (ICDE 2013), Pages 625-636.

53. <u>Da Yan</u>, Zhou Zhao, Wilfred Ng, **"Leveraging read rates of passive RFID tags for real-time indoor location tracking**," The 21st ACM International Conference on Information and Knowledge Management (CIKM 2012), Pages 375-384.

54. <u>Da Yan</u>, Zhou Zhao, Wilfred Ng, **"Monochromatic and bichromatic reverse nearest neighbor queries on land surfaces**," The 21st ACM International Conference on Information and Knowledge Management (CIKM 2012), Pages 942-951.

55. Zhou Zhao, <u>Da Yan</u>, Wilfred Ng, **"Mining probabilistically frequent sequential patterns in uncertain databases**," The 15th International Conference on Extending Database Technology (EDBT 2012), Pages 74-85.

56. <u>Da Yan</u>, Raymond Chi-Wing Wong, Wilfred Ng, **"Efficient methods for finding influential locations with adaptive grids**," The 20th ACM International Conference on Information and Knowledge Management (CIKM 2011), Pages 1475-1484.

57. <u>Da Yan</u>, Wilfred Ng, **"Robust Ranking of Uncertain Data**," The 16th International Conference on Database Systems for Advanced Applications (DASFAA 2011), Pages 254-268. **Best Paper Award (Sole Winner).**

Conference Short Papers

1. Mirza Tanzim Sami, <u>Da Yan</u>, Bhadhan Roy Joy, Jalal Khalil, Ricardo Cevallos, Md Emon Hossain, Kejin Hu, and Yang Zhou, **"Center-Based iPSC Colony Counting with Multi-Task Learning,"** The 22nd IEEE International Conference on Data Mining (ICDM 2022), Pages 1173-1178.

2. Ivan Mihov, Haiquan Chen, Xiao Qin, Wei-Shinn Ku, <u>Da Yan</u>, and Yuhong Liu, **"MentalNet: Heterogeneous Graph Representation for Early Depression Detection,"** The 22nd IEEE International Conference on Data Mining (ICDM 2022), Pages 1113-1118.

3. Bo Hui, <u>Da Yan</u>, Haiquan Chen, Wei-Shinn Ku, **"Trajectory WaveNet: A Trajectory-Based Model for Traffic Forecasting,"** The 21st IEEE International Conference on Data Mining (ICDM 2021), Pages 1114-1119.

4. Bo Hui, <u>Da Yan</u>, and Wei-Shinn Ku, **"Node-Polysemy Aware Recommendation by Matrix Completion with Side Information,"** 2021 IEEE International Conference on Big Data (IEEE BigData 2021), Pages 636-642.

5. <u>Da Yan</u>, Wenwen Qu, Guimu Guo, Xiaoling Wang, **"PrefixFPM: A Parallel Framework for General-Purpose Frequent Pattern Mining,"** The 36th IEEE International Conference on Data Engineering (**ICDE 2020**), Pages 1938-1941.

6. <u>Da Yan</u>, Hongzhi Chen, James Cheng, Zhenkun Cai, Bin Shao, **"Scalable De Novo Genome Assembly Using Pregel,"** The 34th IEEE International Conference on Data Engineering (**ICDE 2018**), Pages 1216-1219.

Journal Papers

1. Harry Kai-Ho Chan, Cheng Long, <u>Da Yan</u>, Raymond Chi-Wing Wong, Hua Lu, **"Fraction-Score: A Generalized Support Measure for Weighted and Maximal Co-location Pattern Mining,"** IEEE Transactions on Knowledge and Data Engineering (**TKDE**) 36(4): 1582-1596 (2024).

2. Nguyen Huynh, <u>Da Yan</u>, Yueen Ma, Shengbin Wu, Cheng Long, Mirza Tanzim Sami, Abdullateef Almudaifer, Zhe Jiang, Haiquan Chen, Michael N. Dretsch, Thomas S. Denney, Rangaprakash Deshpande, Gopikrishna Deshpande, **"The Use of Generative Adversarial Network and Graph Convolution Network for Neuroimaging-Based Diagnostic Classification,"** Brain Sciences, 14(5):456, MDPI, 2024.

3. Mostafa Jafarzadehfadaki, Virginia P. Sisiopiku, Wencui Yang, Dimitra Michalaka, Kweku Tekyi Brown, William J. Davis, Jalal Khalil, <u>Da Yan</u>, **"Spatiotemporal Patterns and Influences of Demographic Characteristics and Land Use Patterns on Micromobility Ridership in Birmingham, Alabama,"** Multimodal Transportation. Vol. 3, Issue 3, September 2024, 100140.

4. Lyuheng Yuan, <u>Da Yan</u>, Wenwen Qu, Saugat Adhikari, Jalal Khalil, Cheng Long, Xiaoling Wang, **"T-FSM: A Task-Based System for Massively Parallel Frequent Subgraph Pattern Mining from a Big Graph,"** Proceedings of the ACM on Management of Data (**PACMMOD**) 1(1): 74:1-74:26 (2023).

5. Zhifeng Bao, Panagiotis Bouros, Reynold Cheng, Byron Choi, Anton Dignös, Wei Ding, Yixiang Fang, Boyang Han, Jilin Hu, Arijit Khan, Wenqing Lin, Xuemin Lin, Cheng Long, Nikos Mamoulis, Jian Pei, Matthias Renz, Shashi Shekhar, Jieming Shi, Eleni Tzirita Zacharatou, Sibo Wang, Xiao Wang, Xue Wang, Raymond Chi-Wing Wong, <u>Da Yan</u>, Xifeng Yan, Bin Yang, Dezhong Yao, Ce Zhang, Peilin Zhao, Rong Zhu, **"A Summary of ICDE 2022 Research Session Panels,"** IEEE Data Eng. Bull. 46(4): 4-17 (2023).

6. Adam D. Smith, Sumner B. Harris, Renato P. Camata, <u>Da Yan</u>, and Cheng-Chien Chen, **"Machine learning the relationship between Debye and superconducting transition temperatures,"** Physical Review B, 2023.

7. <u>Da Yan</u>, Adam D. Smith, Cheng-Chien Chen, **"Structure Prediction and Materials Design with Generative Neural Networks,"** Nature Computational Science, 2023.

8. Zongliang Yue, <u>Da Yan</u>, Guimu Guo, Jake Chen, **"Biological Network Mining,"** Biostatistics Research, Volume 1, Issue 1, 2023, Pages 31–59.

9. Ji Cheng, <u>Da Yan</u>, Wenwen Qu, Xiaotian Hao, Cheng Long, Wilfred Ng, Xiaoling Wang, **"Mining Order-Preserving Submatrices Under Data Uncertainty: A Possible-World Approach and Efficient Approximation Methods,"** ACM Transactions on Database Systems (**TODS**), Volume 47, Issue 2, June 2022, Article No. 7, Pages 1–57.

10. Yang Zhou, Jiaxiang Ren, Ruoming Jin, Zijie Zhang, Jingyi Zheng, Zhe Jiang, <u>Da Yan</u>, Dejing Dou, **"Unsupervised Adversarial Network Alignment with Reinforcement Learning,"** ACM Transactions on Knowledge Discovery from Data (TKDD), Volume 16, Issue 3, June 2022, Article No. 50, Pages 1–29.

11. Wenchong He, Arpan Man Sainju, Zhe Jiang, <u>Da Yan</u>, Yang Zhou, **"Earth Imagery Segmentation on Terrain Surface with Limited Training Labels: A Semi-supervised Approach based on Physics-Guided Graph Co-Training,"** ACM Transactions on Intelligent Systems and Technology (TIST), Volume 13, Issue 2, April 2022, Article No. 26, Pages 1–22.

12. Virginia Sisiopiku, Taniya Sultana, Jalal Khalil, <u>Da Yan</u>, **"Potential Benefits of Increased Public Transit Ridership in Medium Sized Cities: A Case Study,"** Journal of Transportation Technologies, Vol. 12, No. 1, January 2022.

13. Jalal Khalil, <u>Da Yan</u>, Guimu Guo, Lyuheng Yuan, **"Parallel Mining of Large Maximal Quasi-Cliques,"** VLDB Journal (**VLDBJ**), Volume 31, Issue 4, 2022, Pages 649–674.

14. <u>Da Yan</u>, Guimu Guo, Jalal Khalil, M. Tamer Ozsu, Wei-Shinn Ku, John C.S. Lui, **"G-thinker: A General Distributed Framework for Finding Qualified Subgraphs in a Big Graph with Load Balancing,"** VLDB Journal (**VLDBJ**), Volume 31, Issue 2, 2022, Pages 287–320.

15. <u>Da Yan</u>, Wenwen Qu, Guimu Guo, Xiaoling Wang, Yang Zhou, **"PrefixFPM: A Parallel Framework for General-Purpose Mining of Frequent and Closed Patterns,"** VLDB Journal (**VLDBJ**), Volume 31, Issue 2, 2022, Pages 253–286.

16. Wei-Chih Chen, Joanna N. Schmidt, <u>Da Yan</u>, Yogesh K. Vohra, Cheng-Chien Chen, "Machine learning and evolutionary prediction of superhard B-C-N compounds. npj Computational Materials 7, 114 (2021). https://doi.org/10.1038/s41524-021-00585-7

17. Guimu Guo, Hongzhi Chen, Da Yan, James Cheng, Jake Y. Chen, Zechen Chong, "**Scalable De Novo Genome Assembly Using a Pregel-Like Graph-Parallel System**," IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB) 18(2): 731-744 (2021).

18. Arpan Man Sainju, Wenchong He, Zhe Jiang, Da Yan, Haiquan Chen, "**Flood Inundation Mapping with Limited Observations Based on Physics-Aware Topography Constraint**," Frontiers in Big Data 4: 707951 (2021).

19. Sherif Sakr, Angela Bonifati, Hannes Voigt, Alexandru Iosup, Khaled Ammar, Renzo Angles, Walid G. Aref, Marcelo Arenas, Maciej Besta, Peter A. Boncz, Khuzaima Daudjee, Emanuele Della Valle, Stefania Dumbrava, Olaf Hartig, Bernhard Haslhofer, Tim Hegeman, Jan Hidders, Katja Hose, Adriana Iamnitchi, Vasiliki Kalavri, Hugo Kapp, Wim Martens, M. Tamer Özsu, Eric Peukert, Stefan Plantikow, Mohamed Ragab, Matei Ripeanu, Semih Salihoglu, Christian Schulz, Petra Selmer, Juan F. Sequeda, Joshua Shinavier, Gábor Szárnyas, Riccardo Tommasini, Antonino Tumeo, Alexandru Uta, Ana Lucia Varbanescu, Hsiang-Yun Wu, Nikolay Yakovets, Da Yan, Eiko Yoneki, "**The Future is Big Graphs! A Community View on Graph Processing Systems**," Communications of the ACM (CACM), September 2021, Vol. 64 No. 9, Pages 62-71.

20. Guimu Guo, Da Yan, M. Tamer Özsu, Zhe Jiang, Jalal Khalil, "**Scalable Mining of Maximal Quasi-Cliques: An Algorithm-System Codesign Approach**," Proceedings of the VLDB Endowment (PVLDB) 14(4): 573-585 (2020).

21. Da Yan, Yuzhen Huang, Miao Liu, Hongzhi Chen, James Cheng, Huanhuan Wu, Chengcui Zhang, "**GraphD: Distributed Vertex-Centric Graph Processing Beyond the Memory Limit**," IEEE Transactions on Parallel and Distributed Systems (TPDS) 29(1): 99-114 (2018).

22. Fanhua Shang, Yuanyuan Liu, James Cheng, Da Yan, "**Fuzzy Double Trace Norm Minimization for Recommendation Systems**," IEEE Transactions on Fuzzy Systems 26(4): 2039-2049 (2018).

23. Da Yan, James Cheng, M. Tamer Özsu, Fan Yang, Yi Lu, John C. S. Lui, Qizhen Zhang, Wilfred Ng, "**A General-Purpose Query-Centric Framework for Querying Big Graphs**," Proceedings of the VLDB Endowment (PVLDB) 9(7): 564-575 (2016).

24. Da Yan, Zhou Zhao, Wilfred Ng, Steven Liu, "**Probabilistic Convex Hull Queries over Uncertain Data**," IEEE Transactions on Knowledge and Data Engineering (TKDE) 27(3): 852-865 (2015).

25. Da Yan, Zhou Zhao, Wilfred Ng, "**Efficient processing of optimal meeting point queries in Euclidean space and road networks**," Knowledge and Information Systems (KAIS) 42(2): 319-351 (2015).

26. <u>Da Yan</u>, James Cheng, Zhou Zhao, Wilfred Ng, **"Efficient location-based search of trajectories with location importance**," Knowledge and Information Systems (KAIS) 45(1): 215-245 (2015).

27. <u>Da Yan</u>, James Cheng, Kai Xing, Yi Lu, Wilfred Ng, Yingyi Bu, **"Pregel Algorithms for Graph Connectivity Problems with Performance Guarantees**," Proceedings of the VLDB Endowment (**PVLDB**) 7(14): 1821-1832 (2014).

28. <u>Da Yan</u>, James Cheng, Yi Lu, Wilfred Ng: Blogel, **"A Block-Centric Framework for Distributed Computation on Real-World Graphs**," Proceedings of the VLDB Endowment (**PVLDB**) 7(14): 1981-1992 (2014)

29. Yi Lu, James Cheng, <u>Da Yan</u>, Huanhuan Wu, **"Large-Scale Distributed Graph Computing Systems: An Experimental Evaluation**," Proceedings of the VLDB Endowment (**PVLDB**) 8(3): 281-292 (2014).

30. Zhou Zhao, <u>Da Yan</u>, Wilfred Ng, "Mining Probabilistically Frequent Sequential Patterns in Large Uncertain Databases," IEEE Transactions on Knowledge and Data Engineering (**TKDE**) 26(5): 1171-1184 (2014).

31. <u>Da Yan</u>, Zhou Zhao, Wilfred Ng, "Efficient Algorithms for Finding Optimal Meeting Point on Road Networks," Proceedings of the VLDB Endowment (**PVLDB**) 4(11): 968-979 (2011).

Conference Poster Papers

1. <u>Da Yan</u>, Robert Peters, Yang Zhou, Mohamed Mostafa, **"Methods for AI-Enabled Water Treatment,"** abstract in 2023 AIChE Annual Meeting (AIChE 2023).

2. Mirza Tanzim Sami, <u>Da Yan</u>, Huang Huang, Xinyu Liang, Guimu Guo, and Zhe Jiang, **"Drone-Based Tower Survey by Multi-Task Learning,"** 2021 IEEE International Conference on Big Data (IEEE BigData 2021), Pages 6011-6013.

3. Jalal Khalil, <u>Da Yan</u>, Guimu Guo, Mirza Tanzim Sami, Joy Bhadhan Roy, Virginia P. Sisiopiku, **"Realistic Transport Simulation for Studying the Impacts of Shared Micromobility Services,"** 2021 IEEE International Conference on Big Data (IEEE BigData 2021), Pages 5935-5937.

4. Ji Cheng, Guimu Guo, <u>Da Yan</u>, Xiaotian Hao, Wilfred Ng, **"EasyRain: A User-Friendly Platform for Comparing Precipitation Nowcasting Models**," 2019 IEEE International Conference on Big Data (IEEE BigData 2019), Pages 6019-6021.

5. Guimu Guo, Jalal Khalil, <u>Da Yan</u>, Virginia P. Sisiopiku, **"Realistic Transport Simulation with Open Data**," 2019 IEEE International Conference on Big Data (IEEE BigData 2019), pages 6066-6068.

6. <u>Da Yan</u>, Guimu Guo, Md Mashiur Rahman Chowdhury, M. Tamer Özsu, John C. S. Lui, Weida Tan, **"T-thinker: a task-centric distributed framework for compute-intensive**

divide-and-conquer algorithms," The 24th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP 2019), Pages 411-412.

Conference Demo Papers

1. Jalal Khalil, <u>Da Yan</u>, Lyuheng Yuan, Jiao Han, Saugat Adhikari, Cheng Long, Yang Zhou, **"FSM-Explorer: An Interactive Tool for Frequent Subgraph Pattern Mining from a Big Graph,"** The 40th IEEE International Conference on Data Engineering (ICDE 2024), Best Poster Runner-Up Award.

2. Jalal Khalil, Ahmad Akhlaque, <u>Da Yan</u>, Lyuheng Yuan, Saugat Adhikari, Yang Zhou and Zhe Jiang, **"DirDense: A Tool for Mining Dense Subgraphs from a Big Directed Graph,"** The 25th edition of the ACM International Conference on Information and Knowledge Management (CIKM 2024).

3. Saugat Adhikari, <u>Da Yan</u>, Mirza Tanzim Sami, Jalal Khalil, Lyuheng Yuan, Bhadhan Roy Joy, Zhe Jiang, Arpan Man Sainju, **"An Elevation-Guided Annotation Tool for Flood Extent Mapping on Earth Imagery,"** The 30th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (SIGSPATIAL 2022).

4. Qizhen Zhang, <u>Da Yan</u>, James Cheng, **"Quegel: A General-Purpose System for Querying Big Graphs,"** The 2016 International Conference on Management of Data (SIGMOD 2016), Pages 2189-2192.

5. Zhou Zhao, <u>Da Yan</u>, Wilfred Ng, Shi Gao, **"A transfer learning based framework of crowd-selection on Twitter,"** The 19nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2013), Pages 1514-1517.

6. Zhou Zhao, <u>Da Yan</u>, Wilfred Ng, **"A probabilistic convex hull query tool,"** The 15th International Conference on Extending Database Technology (EDBT 2012), Pages 570-573.

Workshop Papers

1. Jalal Khalil, <u>Da Yan</u>, Guimu Guo, Mirza Tanzim Sami, Joy Bhadhan Roy, Virginia P. Sisiopiku, **"Traffic Study of Shared Micromobility Services by Transportation Simulation,"** The 3rd International Workshop on Big Data Tools, Methods, and Use Cases for Innovative Scientific Discovery (BTSD) held in conjunction with IEEE BigData 2021, Pages 3691-3699.

2. Md Mostafijur Rahman, Arpan Man Sainju, <u>Da Yan</u>, Zhe Jiang, **"Mapping Road Safety Barriers Across Street View Image Sequences: A Hybrid Object Detection and**

Recurrent Model," The 4th ACM SIGSPATIAL Workshop on GeoAI held in conjunction with SIGSPATIAL 2021.

3. Wenwen Qu, <u>Da Yan</u>, Guimu Guo, Xiaoling Wang, Lei Zou, Yang Zhou, **"Parallel Mining of Frequent Subtree Patterns,"** The 2nd International Workshop on Large Scale Graph Data Analytics (LSGDA) held in conjunction with VLDB 2020, published in Communications in Computer and Information Science 1281, Springer 2020, ISBN 978-3-030-61132-3.

4. Guimu Guo, Jalal Khalil, <u>Da Yan</u>, Virginia P. Sisiopiku, **"Realistic Transport Simulation: Tackling the Small Data Challenge with Open Data,"** The 1st International Workshop on Big Data Tools, Methods, and Use Cases for Innovative Scientific Discovery (BTSD) held in conjunction with IEEE BigData 2019, Pages 4512-4519.

Conference Tutorials

1. <u>Da Yan</u>, Lyuheng Yuan, Akhlaque Ahmad, Chenguang Zheng, Hongzhi Chen, James Cheng, **"Systems for Scalable Graph Analytics and Machine Learning: Trends and Methods,"** The 33rd International Joint Conference on Artificial Intelligence (IJCAI 2024).

2. <u>Da Yan</u>, Lyuheng Yuan, Akhlaque Ahmad, Chenguang Zheng, Hongzhi Chen, James Cheng, **"Systems for Scalable Graph Analytics and Machine Learning: Trends and Methods,"** The 30th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (KDD 2024).

3. <u>Da Yan</u>, Lyuheng Yuan, Akhlaque Ahmad, Saugat Adhikari, **"Systems for Scalable Graph Analytics and Machine Learning: Trends and Methods,"** The 25th edition of the ACM International Conference on Information and Knowledge Management (CIKM 2024).

4. Guimu Guo, <u>Da Yan</u>, **"Systems and Algorithms for Massively Parallel Graph Mining,"** Tutorial 3, 2020 IEEE International Conference on Big Data (IEEE BigData 2020).

5. <u>Da Yan</u>, Yingyi Bu, Yuanyuan Tian, Amol Deshpande, James Cheng, **"Big Graph Analytics Systems,"** The 2016 International Conference on Management of Data (SIGMOD 2016), Pages 2241-2243.

Books

1. <u>Da Yan</u>, Yingyi Bu, Yuanyuan Tian, Amol Deshpande, **"Big Graph Analytics Platforms,"** Foundations and Trends in Databases 7(1-2): 1-195 (2017).

2. <u>Da Yan</u>, Yuanyuan Tian, James Cheng, **"Systems for Big Graph Analytics,"** Springer Briefs in Computer Science, Springer 2017, ISBN 978-3-319-58216-0, pp. 1-92.

Book Chapters

1. <u>Da Yan</u>, Yang Zhou, Guimu Guo, **"Parallel Graph Processing,"** Encyclopedia of Big Data Technologies 2022, to appear.
2. <u>Da Yan</u>, Guimu Guo, **"Think Like a Task Programming Model,"** Encyclopedia of Big Data Technologies 2022, to appear.
3. Wei-Chih Chen, <u>Da Yan</u>, Cheng-Chien Chen, **"Machine Learning and First-Principles Discovery of Ternary Superhard Materials,"** ACS Publications, 2022, Pages 211-238.
4. Zongliang Yue, <u>Da Yan</u>, Guimu Guo, Jake Chen, **"Biological Network Mining,"** Modeling Transcriptional Regulation - Methods and Protocols, Methods in Molecular Biology – Springer, 2021, Pages 139-151.
5. <u>Da Yan</u>, Hang Liu, **"Parallel Graph Processing,"** Encyclopedia of Big Data Technologies 2019.
6. Sibo Yan, <u>Da Yan</u>, **"Volatility Estimation in the Era of High-Frequency Finance,"** FinTech as a Disruptive Technology for Financial Institutions, IGI Global, 2019, Pages 99-141.

Editorials

1. Hsiang-Yun Wu, Karsten Klein, <u>Da Yan</u>, **"Effective Network Analytics: Network Visualization and Graph Data Management,"** IEEE Computer Graphics and Applications 43(3): 10-11 (2023).
2. <u>Da Yan</u>, Catia Pesquita, Carsten Görg, Jake Chen, Mohammed J. Zaki, **"21th International Workshop on Data Mining in Bioinformatics (BIOKDD 2022),"** The 28th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (KDD 2022), Pages 4910-4911.
3. <u>Da Yan</u>, Hong Qin, Hsiang-Yun Wu, Jake Y. Chen, "Editorial: AI-Enabled Data Science for COVID-19," Frontiers Big Data 4: 802452 (2021).
4. <u>Da Yan</u>, Steve Qin, Debswapna Bhattacharya, Jake Y. Chen, Mohammed J. Zaki, **"20th International Workshop on Data Mining in Bioinformatics (BIOKDD 2021),"** The 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (KDD 2021), Pages 4175-4176.
5. <u>Da Yan</u>, Sharma V. Thankachan, Jake Y. Chen, **"Guest Editorial for Selected Papers from BIOKDD 2019,"** IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB) 18(3): 809-810 (2021).
6. Jonathan D. Wren, Yongsheng Bai, Zhaohui S. Qin, <u>Da Yan</u>, Ramin Homayouni, **"Proceedings of the 2019 MidSouth Computational Biology and Bioinformatics Society (MCBIOS) Conference,"** BMC Bioinformatics 21-S(4): 254 (2020).

7. <u>Da Yan</u>, Xin Gao, Samah J. Fodeh, Jake Y. Chen, **"Guest Editorial for Selected Papers from BIOKDD 2018 and DMBIH 2018,"** IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB) 17(6): 1832-1834 (2020).

Funded Research Grants

PI, National Science Foundation (NSF), OAC-2414474   **1/1/2024 – 8/31/2026**

Title: Collaborative Research: OAC CORE: Federated-Learning-Driven Traffic Event Management for Intelligent Transportation Systems
Amount: $249,991
Note: with Yang Zhou from Auburn University as the PI from the leading institution

(Transferred from)

PI, National Science Foundation (NSF), OAC-2313192   **9/1/2023 – 8/31/2026**

Title: Collaborative Research: OAC CORE: Federated-Learning-Driven Traffic Event Management for Intelligent Transportation Systems
Amount: $249,991
Note: with Yang Zhou from Auburn University as the PI from the leading institution

Sole PI, DOE Office of Science Early Career Research Program   **6/15/2024 – 6/14/2029**
0000278892

Title: A Programming Framework for Large-Scale Graph Data Analytics on GPUs and New AI Accelerators
Amount: $874,694

(Transferred from)

Sole PI, DOE Office of Science Early Career Research Program   **7/1/2023 – 6/30/2028**
0000274975

Title: A Programming Framework for Large-Scale Graph Data Analytics on GPUs and New AI Accelerators
Amount: $874,694

Sole PI, National Science Foundation (NSF), OAC-1755464   **6/1/2018 – 5/31/2022**
Title: CRII: OAC: Scalable Cyberinfrastructure for Big Graph and Matrix/Tensor Analytics
Amount: $170,941

PI, National Science Foundation (NSF), OAC-2414185   **1/1/2024 – 9/30/2024**

Title: Collaborative Research: OAC Core: Large-Scale Spatial Machine Learning for 3D Surface Topology in Hydrological Applications
Amount: $238,838
Note: with Zhe Jiang from the University of Florida as the PI from the leading institution

(Transferred from)

PI, National Science Foundation (NSF), OAC-2106461   **10/1/2021 — 9/30/2024**

Title: Collaborative Research: OAC Core: Large-Scale Spatial Machine Learning for 3D Surface Topology in Hydrological Applications
Amount: $238,838
Note: with Zhe Jiang from the University of Florida as the PI from the leading institution

PI, Alabama Research and Development Enhancement Fund   **1/15/2021 — 1/15/2024**

(ARDEF), Grant Number: 1ARDEF21 03

Title: Comprehensive Data Science Software Toolkit to Improve Alabama's Mobility Planning for Serving Businesses and Vulnerable Populations
Amount: $391,955
Note: with Virginia Sisiopiku as the Co-PI

Sole PI, National Science Foundation (NSF), OIA-2229394   **2/01/2023 — 1/31/2024**

Title: RII Track-4: NSF: Massively Parallel Graph Processing on Next-Generation Multi-GPU Supercomputers
Amount: $275,573

Co-PI, National Science Foundation (NSF), DGE-1723250   **5/1/2017 — 7/31/2023**

Title: SaTC: EDU: Captivology-Stimuli-Based Learning (CAPITAL) for Big Data Security (BigSec): Towards a Science/Engineering, Career-Oriented Training
Amount: $43,848
Note: with Fei Hu (PI) and Debra Mccallum (Co-PI) from the University of Alabama

Teaching

Teaching (at IU)

CSCI-B 561: Advanced Database Concepts (ADC)   Spring 2024

CSCI-B 461: Database Concepts (DC)   Fall 2024

Previous TA Duties at HKUST

COMP104: Programming Fundamentals and Methodology   Fall 2009

COMP152: Object-Oriented Programming and Data Structures   Spring 2010

COMP570: Introduction to Advanced Algorithmic Techniques   Fall 2010

COMP231: Database Management Systems   Spring 2011

COMP4431: Multimedia Computing   Fall 2012

Students

PhD students:

- **Guimu Guo**, PhD (Fall 2017 — Spring 2022, Level-1 passed on 11/20/2019, Level-2 passed on 4/19/2021, Level-3 passed on 3/26/2022), Alabama EPSCoR Graduate Research Scholar Program (GRSP) Awardee Round 15-16, Tenure-Track Assistant Professor of Computer Science at Rowan University, NJ

- **Jalal Khalil**, PhD (Fall 2019 — Summer 2023, Level-1 passed on 1/21/2022, Level-2 passed on 12/5/2022, Level-3 passed on 6/30/2023), Tenure-Track Assistant Professor of Software Engineering at St. Cloud State University, MN

- **Mirza Tanzim Sami**, PhD Candidate (Spring 2020 — Fall 2023, Level-1 passed on 11/29/2021, Level-2 passed on 11/28/2022, Level-3 passed on 11/10/2023), Alabama EPSCoR Graduate Research Scholar Program (GRSP) Awardee Round 18, Machine Learning Engineer at DEKA Research & Development

- **Abdullateef Almudaifer**, PhD Candidate (Spring 2020 — Spring 2024, Level-1 passed on 12/10/2021, Level-2 passed on 1/23/2023, Level-3 passed on 4/3/2024), Assistant Professor of Computer Science and Engineering, Taibah University, Yanbu, Saudi Arabia

- **Saugat Adhikari**, PhD Student (Fall 2021 — now), UAB Blazer Fellowship Awardee

- **Lyuheng Yuan**, PhD Student (Fall 2021 — now), UAB Blazer Fellowship Awardee

Master students

- **Bhadhan Roy Joy**, Master's (in Data Science) Student (Fall 2021 — Spring 2023)
- **Md Mashiur Rahman Chowdhury**, MSCS RA (Fall 2017 — Fall 2019), UAB Blazer Fellowship Awardee
- **Weida Tan**, MSCS student RA, (Fall 2016 — Fall 2017), Founder of Fledging

Other students

- **Wenwen Qu**, Summer Intern in 2019, East China Normal University (ECNU) PhD Student
- **Tianyi Miao**, Summer Intern in 2018 from Indian Springs School, UPenn Undergraduate Student

Service

Services at IUB

- Serving IUB CS Tenure Track Faculty (Systems) Search Committee for 2024
- Serving IUB CS PhD Admissions Committee for 2024
- Serving the Qualifying Exam Committee of Mr. Isuru Janith Ranawaka (Advised by Dr. Ariful Azad)

Previous Services at UAB

- PhD Program Director + TA Assignment since Fall 2023
- Leading NISP submission for B.S. in Data Science (Math + CS)
- Serving UAB CS Tenure Track Faculty Search Committee for 2023
- Serving UAB Physics Tenure Track Faculty Search Committee for 2023
- Serving UAB Mathematics Tenure Track in Statistics Search Committee for 2022
- Computer Science judge for UAB-CORD Central Alabama Regional Science and Engineering Fair in 2018 — 2020
- Hosting summer intern students, Tianyi Miao (2018) and Le'Dederic Zellander
- Computer Science faculty representative on the UABTeach Steering Committee
- Department website update coordinator in 2016 — 2017 (during department name change from CIS to CS)
- Coordinator of visitors to the department for seminars and faculty candidate talks in 2017 — 2018
- Attending commencements and various on-campus and in-state events for introducing the CS programs
- Graduate student admissions committee where I help Dr. Nitesh Saxena and Dr. Ragib Hasan review PhD student applications, and help Dr. Chengcui Zhang review MSDS student applications
- Program committee of Informatics Institute's COVID-19 Data Science Hackathon
- Mentor of Team 6 in Informatics Institute's COVID-19 Data Science Hackathon (awarded second prize)
- PhD Dissertation Committee for Xinpeng Liao from UAB Computer Science
- PhD Dissertation Committee for Hadia M.R.M. Ahmed from UAB Computer Science
- PhD Dissertation Committee for Ramin Goudarzi Karim from UAB Math

- **PhD Dissertation Committee for Sandeep Chowdary Vejandla from UAB Math**
- **PhD Dissertation Committee for Chia-Min Lin from UAB Physics**
- **Master's Thesis Committee for Chloe Jones from UAB Department of Psychology and School of Medicine**
- **Master's Thesis Committee for Taniya Sultana from UAB Civil Engineering**
- **Master's Thesis Committee for Sahila Sarjana from UAB Civil Engineering**
- **Master's Thesis Committee for Orhun Vural from UAB Computer Science**
- **Special topic exam committee for David Hoxie from UAB Physics**
- **PhD Dissertation Committee for David Hoxie from UAB Physics**
- **UAB Night in Huntsville (Nov 4, 2021)**
- **Participating in the Grand Challenge team organized by Dr. Janelle M. Chiasera**
- **Participating in planning meetings for NSF EPSCoR RII Track-1 proposal organized by Dr. Yogesh Vohra**
- **Participating in School of Engineering Strategic Planning and New Business Development Committee organized by Dr. Lee Moradi**

Conference Program Committee

ACM International Conference on Management of Data (SIGMOD)	2019 − 2021, 2024, 2025
International Conference on Very Large Data Bases (VLDB)	2018 (Research), 2021 (Demo)
SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)	2020 − 2025
IEEE International Conference on Data Engineering (ICDE)	2020 − 2023, 2025
International Conference on Machine Learning (ICML)	2024
Conference on Neural Information Processing Systems (NeurIPS)	2023 − 2024
The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)	2024
ACL Rolling Review (ARR)	2024
AAAI Conference on Artificial Intelligence (AAAI)	2021, 2023
International Joint Conference on Artificial Intelligence (IJCAI)	2017, 2021 (Senior PC), 2022 (IJCAI-ECAI), 2023, 2024 (including Doctoral Consortium)
International Conference on Learning Representations	2024

ACM SIGIR Conference on Research and Development in Information Retrieval	2023 − 2024
IEEE International Parallel & Distributed Processing Symposium (IPDPS)	2024
International Conference on Extending Database Technology (EDBT)	2023 (Demo Track)
International Symposium on Spatial and Temporal Databases (SSTD)	2021 (Webmaster), 2023
International Workshop on Data Mining in Bioinformatics (BIOKDD) in Conjunction with KDD, Leading Program Co-Chair	Since 2018
SIAM International Conference on Data Mining (SDM)	2022
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)	2020 − 2022
IEEE International Conference on Big Data (IEEE BigData)	2021
ACM International Conference on Information and Knowledge Management (CIKM)	2021, 2022 (Applied Research Track)
IEEE International Conference on Tools with Artificial Intelligence	2020
Annual MidSouth Computational Biology and Bioinformatics Society Conference (MCBIOS), Poster Chair	2019
Workshop on Data Mining in Biomedical Informatics and Healthcare (DMBIH) in Conjunction with ICDM	2019 (Co-organizer), 2020
International Workshop on Big Data Tools, Methods, and Use Cases for Innovative Scientific Discovery (BTSD) in Conjunction with IEEE BigData	2019 − 2021
IEEE Big Data Congress	2018, 2019
International Conference on Parallel Processing (ICPP)	2018, 2022
IEEE International Conference on Information Reuse and Integration for Data Science (IRI)	2018 − 2021
International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP)	2017
4th International Workshop on Big Data Management and Service (BDMS 2017) with DASFAA	2017
2nd Annual International Conference on Information System and Artificial Intelligence (ISAI 2017)	2017
8th International Conference on Database Management Systems (DMS 2017)	2017

IEEE International Conference on Parallel and Distributed Systems (ICPADS)	2016
1st International Workshop on Graph Analytics and Query Processing (GAP 2016) in Conjunction with APWeb	2016

Journal Review and Guest Editor

BMC Bioinformatics, Guest Co-Editor	$2019 - 2020$
Frontiers in Big Data, Topic Editor (Leading), Review Editor	Since 2022
IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), Guest Co-Editor (Leading)	Since 2018
IEEE Computer Graphics and Applications (CG&A), Guest Co-Editor	2022
ACM Transactions on Database Systems (TODS)	$2017 - 2023$
The VLDB Journal (VLDBJ)	$2017 - 2022$
IEEE Transactions on Parallel and Distributed Systems (TPDS)	$2016 - 2022$
IEEE Transactions on Knowledge and Data Engineering (TKDE)	$2014 - 2022$
ACM Computing Surveys (CSUR)	2020
ACM Transactions on Architecture and Code Optimization (TACO)	2020
Journal of Parallel and Distributed Computing (JPDC)	2020
IEEE Transactions on Big Data (TBD)	2020
ACM/IEEE Transactions on Networking (TON)	2020
IEEE Transactions on Network Science and Engineering (TNSE)	2018, 2019
World Wide Web Journal (WWWJ)	2015, 2016
IEEE Transactions on Cloud Computing (TCC)	2018
Knowledge and Information Systems (KAIS)	$2015 - 2022$
Information Systems (IS)	2018
Information Sciences	$2018 - 2021$
Future Generation Computer Systems (FGCS)	2017
Frontiers of Computer Science (FCS)	2016, 2017
Distributed and Parallel Databases (DAPD)	2016
Computational Intelligence	2016

Grant Review

Since 2019, I serve in multiple NSF CISE panels each year. Per NSF requirement, the concrete panel information is not disclosed.

Event Chairing

- **Session Chair of ICDE 2024 "Graphs, Networks, and Semistructured Data I"**
- **Session Chair of ICDE 2024 "Graphs, Networks, and Semistructured Data IV"**
- **Session Chair of ICDE 2022 "Data Mining and Knowledge Discovery"**
- **Session Chair of ICDE 2022 Data Mining Panel: https://youtu.be/Q6mktbSGWFM Panelists are Prof. Wei Ding (University of Massachusetts Boston), Prof. Xuemin Lin (The University of New South Wales), Prof. Jian Pei (Simon Fraser University), Prof. Shashi Shekhar (University of Minnesota Twin Cities) and Prof. Xifeng Yan (UC Santa Barbara)**
- **Session Chair of ICPP 2022 "Parallel Algorithms 2"**
- **Backup Session Chair of Demo Track in SSTD 2021**
- **Session Chair of Session SPT 4 in ICDE 2021**
- **Session Chair of Session 24 in SIGMOD 2020**
- **Session Chair of Session Co-Chair of SIGMOD 2020 Research Zoomtable on Spatial Data Management**
- **Session Chair of Session 09D Graph Algorithms 5 in VLDB 2020**
- **Session Chair of Session 14D Graph Algorithms 8 in VLDB 2020**
- **Co-organizer of Dagstuhl Seminar 22031 Bringing Graph Databases and Network Visualization Together**