Zhiqian Chen

✉ zchen@cse.msstate.edu
https://imczq.com
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RESEARCH Fundamental principles of networked system dynamics by integrating machine learning, network science, and dynamical systems. My collaborations span diverse applications, including Social network, Transportation, Epidemiology, Brain Disease, Materials and Circuit.

Employment

2020-now **Assistnat Professor**, *Computer Science and Engineering, Mississippi State University*.

Education

2014–2020 **Virginia Tech**, *Ph.D., Computer Science*, Falls Church, Virginia, United States.

2010–2013 **Peking University**, *M.E., Software Engineering*, China.

2005–2009 **Huazhong University of Science & Technology**, *B.E., Software Engineering*, China.

Grants

Personal Credits: $ 1,665,222. / **Total External: $ 11,196,037.**

NSF CAREER: From Fragmentation to Integration: Advancing Cross-Graph Dynamics in Interdependent Networks (#2443266) NSF award link

Sole PI, **$517,594** (100% credit), 06/2025-05/2030

NSF CISE MSI: RCBP: III: Advancing Speech Detection: A Hybrid Approach Using Large Language Models and Graph Neural Networks (#2431176) NSF award link

Co-PI/University PI, **$400,000** (33% credit, MS State share $259,948.00), 1/2025-12/2026

NSF CIRC: Planning-C: Synergistic Graph Flow Analytics: An Integrated Infrastructure for Bridging Complexity, Fragmentation, and Interdisciplinary Gaps (#2345921) NSF award link

PI, **$99,998** (60% credit), 7/2024-6/2025

NSF CRII: Interpretable Influence Propagating and Blocking on Graphs (#2153369) NSF award link

Sole PI, **$174,004** (100% credit), 5/2022-11/2024

USDA [ARS] Developing Detection and Modeling Tools for the Geospatial and Environmental Epidemiology of Animal Disease (#58-6064-3-017) Project Page

Co-PI, **$3,073,602** (5% credit), 10/2023-08/2028

USDA [ARS] Advancing Agricultural Research through High Performance Computing (#58-0200-0-002)

Co-PI, **$5,690,689** (5% credit), 10/2022-08/2024

NSF [EDU] ITEST: Learning to create Intelligent Solutions with Machine Learning and Computer Vision: A Pathway to AI Careers for Diverse High School Students (#2342574) NSF award link

Co-PI, **$1,192,951** (25% credit), 09/2024-08/2027

Turing AI Gift Money, **$25,000** (100% credit), 08/2025

NSF [III] REU Supplementary, PI, **$14,000** (100% credit), 11/2023-11/2024

USDA [ARS] Summer Internship Project, PI, **$8,199** (100% credit), 5/2024-4/2025

Total Internal $ 19,094.5

CTL PI, Ottilie Schillig Special Teaching Award, $2,994.50 Awardee List

INTER-INS PI, Global Development Seed Grant Award, International Institute $6,000 News Page

BAGLEY PI, Working Group in Graph AI, Bagley College of Engineering $4,100

ORED PI/Co-PI, Undergrad Research Program, ORED, 2022/2024/2025 (Sole PI, $2,000), 2023 (Co-PI, $1,500)

Awards & Honors

AWARD Best Paper Award at ACM SIGSPATIAL 2020 Awards Recipients

AWARD Best Paper Award at GISTAM 2015 Awards Recipients

AWARD Outstanding Contribution Award, 2016, Toyota Research Institute, North America

Award	Ottilie Schillig Special Teaching Award, 2025, Center for Teaching and Learning Award Recipients
Honor	Editor's Choice Article Editor Choices
Honor	Top 50 Chem. & Mater. Sciences Articles in **Nature Communications** 2019 Top Paper List
Honor	Excellent Reviewer, IEEE Transactions on Network Science and Engineering, 2024
Honor	Excellent Reviewer (top 20%), SIG KDD, 2025

Presentations

Tutorial	Unifying Spectral and Spatial Graph Neural Network SDM 2025, May 3, D.C., U.S. Tutorial page at SDM
Tutorial	Unifying Spectral and Spatial Graph Neural Network CIKM 2024, Oct 21, Boise, Idaho, U.S. CIKM tutoiral list
Tutorial	Unifying Spectral and Spatial Graph Neural Network SIAM Math & Data Science 2024, Oct 23, Atlanta, GA, U.S. Tutorial page at MDS
Tutorial	Unifying Spectral and Spatial Graph Neural Network CVPR 2024, June 18, Seattle, Washington, U.S. Tutorial page at CVPR
Paper	Early forecasting of the impact of traffic accidents using a single shot observation SIAM Data Mining 2022, April, Minneapolis, Minnesota, U.S.
Tutorial	Studying spread patterns of covid-19 based on spatiotemporal data SIAM Data Mining 2021, April, Online

Teaching

Undergrad	CSE 4633/6633 Artificial Intelligence, CSE 4693/6693 Intro to Machine Learning
Graduate	CSE 8673 Machine Learning, CSE 8990 Graph Machine Learning

Mentoring (as major advisor)

Ph.D.	Marouane Benbrahim, Tamanna Rashme, Amin George, Josh Waldbieser, Xinyuan Chen, Zijian Zhang, Jiashan Wu, Rocker D'Antonio,
Undergrad	Kevin Ho

Graduated

PhD	Zonghan Zhang, Fall 2025
Master	Matthew Rester, Henry Smith, Samuel Prabhakar, Rajeev Jogi, Piero Bracamonte, Suman Adhikari, Ramyasri Veerapaneni, Aymane Jouhari.
Undergrad	Jason Weeks, Ben Moore, Jack Maloney, Ethan Rogers, Prathyusha Mustiyala, Andrew McBride, Aalok Uprety, Mason Fisher, Reid Sewell.

Service

Co-Chair	IEEE ICDM 2025, Poster Organization Committee
Co-Chair	IEEE BigData 2024, BigData Cup Challenges Organization Committee
Panelist	NSF Panel, 2021, 2023, 2024
Editorial Board	Frontiers in Big Data - Data Science, Frontiers in Big Data - Data Mining and Management, Frontier Topic Editor, 2022-present
Reviewer	International Conference on Machine Learning (*ICML*), 2021-2024. International Conference on Learning Representations (*ICLR*), 2022-2024. Neural Information Processing System (*NeurIPS*), 2020-2024. AAAI conference on Artificial Intelligence (*AAAI*), 2021-2024. International Joint Conference on Artificial Intelligence (*IJCAI*), 2022-2024. ACM SIG on Knowledge Discovery and Data Mining (*KDD*), 2020-2024. ACM SIG on Information Retrieval (*SIGIR*), 2020, 2022, 2023. IEEE Transactions on Knowledge and Data Engineering (*TKDE*), 2020. ACM Transactions on Knowledge Discovery from Data (*TKDD*), 2021, 2024
Advisor	Mississippi State University AI club Student Organizations in the Bagley College of Engineering

Publications

[1] Taoran Ji, Nathan Self, Kaiqun Fu, Zhiqian Chen, Naren Ramakrishnan, and Chang-Tien Lu. Citation forecasting with multi-context attention-aided dependency modeling. *ACM Transactions on Knowledge Discovery from Data*, 18(6):1–23, 2024.

[2] Kollin Napier, Tanmay Bhowmik, and Zhiqian Chen. Explaining poor performance of text-based machine learning models for vulnerability detection. *Empirical Software Engineering*, 29(5):113, 2024.

[3] Nisha Pillai, Bindu Nanduri, Michael J Rothrock Jr, Zhiqian Chen, and Mahalingam Ramkumar. Bayesian-guided generation of synthetic microbiomes with minimized pathogenicity. *arXiv preprint arXiv:2405.00070*, 2024.

[4] Rui Shang, Siji Chen, Zhiqian Chen, and Chang-Tien Lu. Graphnilm: A graph neural network for energy disaggregation. In *Pacific-Asia Conference on Knowledge Discovery and Data Mining*, pages 431–443. Springer Nature Singapore Singapore, 2024.

[5] Zirui Yuan, Minglai Shao, and Zhiqian Chen. Graph bayesian optimization for multiplex influence maximization. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 38, pages 22475–22483, 2024.

[6] Lei Zhang, Zhiqian Chen, Chang-Tien Lu, and Liang Zhao. Network interdiction goes neural. *arXiv preprint arXiv:2405.16409*, 2024.

[7] Zijian Zhang, Zonghan Zhang, and Zhiqian Chen. Flowgpt: How long can llms trace back and predict the trends of graph dynamics? In *SouthNLP*, 2024.

[8] Zonghan Zhang, Zijian Zhang, and Zhiqian Chen. Multiple-source localization from a single-snapshot observation using graph bayesian optimization. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 38, pages 22538–22546, 2024.

[9] Yaya Zhao, Kaiqi Zhao, Zhiqian Chen, Yuanyuan Zhang, Yalei Du, and Xiaoling Lu. A graph-based representation framework for trajectory recovery via spatiotemporal interval-informed seq2seq. In *Proceedings of the Thirty-Third International Joint Conference on Artificial Intelligence (IJCAI-24)*, pages 2588–2597. https://doi.org/10.24963/ijcai.2024/286, 2024.

[10] Kourosh T Baghaei, Amirreza Payandeh, Pooya Fayyazsanavi, Zhiqian Chen, Somayeh Bakhtiari Ramezani, and Shahram Rahimi. Deep representation learning: Fundamentals, technologies, applications, and open challenges. *IEEE Access*, 2023.

[11] Subhodip Biswas, Fanglan Chen, Zhiqian Chen, Chang-Tien Lu, and Naren Ramakrishnan. Memetic algorithms for spatial partitioning problems. *ACM Transactions on Spatial Algorithms and Systems*, 9(1):1–31, 2023.

[12] Fanglan Chen, Subhodip Biswas, Zhiqian Chen, Shuo Lei, Naren Ramakrishnan, and Chang-Tien Lu. Exploring tradeoffs in automated school redistricting: Computational and ethical perspectives. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 37, pages 15912–15920, 2023.

[13] Zhiqian Chen, Fanglan Chen, Lei Zhang, Taoran Ji, Kaiqun Fu, Liang Zhao, Feng Chen, Lingfei Wu, Charu Aggarwal, and Chang-Tien Lu. Bridging the gap between spatial and spectral domains: A unified framework for graph neural networks. *ACM Computing Surveys*, 56(5):42, 2023.

[14] Nisha Pillai, Bindu Nanduri, Michael J Rothrock, Zhiqian Chen, and Mahalingam Ramkumar. Towards optimal microbiome to inhibit multidrug resistance. In *2023 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB)*, pages 1–9. IEEE, 2023.

[15] Lei Zhang, Zhiqian Chen, Chang-Tien Lu, and Liang Zhao. Fast and adaptive dynamics-on-graphs to dynamics-of-graphs translation. *Frontiers in big Data*, 6:1274135, 2023.

[16] Lei Zhang, Qisheng Zhang, Zhiqian Chen, Yanshen Sun, Chang-Tien Lu, and Liang Zhao. Infinitely deep graph transformation networks. In *2023 IEEE International Conference on Data Mining (ICDM)*, pages 778–787. IEEE Computer Society, 2023.

[17] Zijian Zhang, Zonghan Zhang, and Zhiqian Chen. Xflow: Benchmarking flow behaviors over graphs. *arXiv preprint arXiv:2308.03819*, 2023.

[18] Zonghan Zhang and Zhiqian Chen. Accelerating simulation-based influence maximization via bayesian optimization. In *openreview.net*, 2023.

[19] Zonghan Zhang and Zhiqian Chen. Understanding influence maximization via higher-order decomposition. In *Proceedings of the 2023 SIAM International Conference on Data Mining (SDM)*, pages 766–774. Society for Industrial and Applied Mathematics, 2023.

[20] Subhodip Biswas, Fanglan Chen, Zhiqian Chen, Chang-Tien Lu, and Naren Ramakrishnan. Sampling-based techniques for designing school boundaries. *arXiv preprint arXiv:2206.03703*, 2022.

[21] Zhiqian Chen and Zonghan Zhang. Demystifying graph convolution with a simple concatenation. *arXiv preprint arXiv:2207.12931*, 2022.

[22] Guangyu Meng, Qisheng Jiang, Kaiqun Fu, Beiyu Lin, Chang-Tien Lu, and Zhqian Chen. Early forecasting of the impact of traffic accidents using a single shot observation. In *Proceedings of the 2022 SIAM International Conference on Data Mining (SDM)*, pages 100–108. Society for Industrial and Applied Mathematics, 2022.

[23] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Machine learning for computer scientists and data analysts: from an applied perspective, 2022.

[24] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Adversarial machine learning. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 305–328. Springer International Publishing Cham, 2022.

[25] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Applied machine learning for cloud resource management. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 405–427. Springer International Publishing Cham, 2022.

[26] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. A brief review of probability theory and linear algebra. *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 35–79, 2022.

[27] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Graph learning. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 277–304. Springer International Publishing Cham, 2022.

[28] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Online learning. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 235–256. Springer International Publishing Cham, 2022.

[29] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Recommender learning. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 257–276. Springer International Publishing Cham, 2022.

[30] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Reinforcement learning. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 217–232. Springer International Publishing Cham, 2022.

[31] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Sensornet: An educational neural network framework for low-power multimodal data classification. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 331–357. Springer International Publishing Cham, 2022.

[32] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Supervised learning. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 81–162. Springer International Publishing Cham, 2022.

[33] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Transfer learning in mobile health. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 359–382. Springer International Publishing Cham, 2022.

[34] Setareh Rafatirad, Houman Homayoun, Zhiqian Chen, and Sai Manoj Pudukotai Dinakarrao. Unsupervised learning. In *Machine Learning for Computer Scientists and Data Analysts: From an Applied Perspective*, pages 163–216. Springer International Publishing Cham, 2022.

[35] Jason Wang, Kaiqun Fu, Zhiqian Chen, and Chang-Tien Lu. Augmentation of chinese character representations with compositional graph learning (student abstract). In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 36, pages 13075–13076, 2022.

[36] Lei Zhang, Zhiqian Chen, Chang-Tien Lu, and Liang Zhao. From "dynamics on graphs" to "dynamics of graphs": An adaptive echo-state network solution (student abstract). In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 36, pages 13111–13112, 2022.

[37] Zonghan Zhang, Subhodip Biswas, Fanglan Chen, Kaiqun Fu, Taoran Ji, Chang-Tien Lu, Naren Ramakrishnan, and Zhiqian Chen. Blocking influence at collective level with hard constraints (student abstract). In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 36, pages 13115–13116, 2022.

[38] Zhiqian Chen, Lei Zhang, Gaurav Kolhe, Hadi Mardani Kamali, Setareh Rafatirad, Sai Manoj Pudukotai Dinakarrao, Houman Homayoun, Chang-Tien Lu, and Liang Zhao. Deep graph learning for circuit deobfuscation. *Frontiers in big Data*, 4:608286, 2021.

[39] Kaiqun Fu, Taoran Ji, Nathan Self, Zhiqian Chen, and Chang-Tien Lu. A hierarchical attention graph convolutional network for traffic incident impact forecasting. In *2021 IEEE International Conference on Big Data (Big Data)*, pages 1619–1624. IEEE, 2021.

[40] Taoran Ji, Nathan Self, Kaiqun Fu, Zhiqian Chen, Naren Ramakrishnan, and Chang-Tien Lu. Dynamic multi-context attention networks for citation forecasting of scientific publications. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 35, pages 7953–7960, 2021.

[41] Guoming Li, Yanbo Huang, Zhiqian Chen, Gary D Chesser Jr, Joseph L Purswell, John Linhoss, and Yang Zhao. Practices and applications of convolutional neural network-based computer vision systems in animal farming: A review. *Sensors*, 21(4):1492, 2021.

[42] Guoming Li, Xue Hui, Zhiqian Chen, Gary D Chesser Jr, and Yang Zhao. Development and evaluation of a method to detect broilers continuously walking around feeder as an indication of restricted feeding behaviors. *Computers and electronics in agriculture*, 181:105982, 2021.

[43] Beiyu Lin, Xiaowei Jia, and Zhiqian Chen. Sdm 21 tutorial: Studying spread patterns of covid-19 based on spatiotemporal data. In *SIAM Data Mining 2021*, 2021.

[44] Padmaksha Roy, Shailik Sarkar, Subhodip Biswas, Fanglan Chen, Zhiqian Chen, Naren Ramakrishnan, and Chang-Tien Lu. Deep diffusion-based forecasting of covid-19 by incorporating network-level mobility information. In *Proceedings of the 2021 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, pages 168–175, 2021.

[45] Subhodip Biswas, Fanglan Chen, Zhiqian Chen, Chang-Tien Lu, and Naren Ramakrishnan. Incorporating domain knowledge into memetic algorithms for solving spatial optimization problems. In *Proceedings of the 28th International Conference on Advances in Geographic Information Systems*, pages 25–35, 2020.

[46] Subhodip Biswas, Fanglan Chen, Andreea Sistrunk, Sathappan Muthiah, Zhiqian Chen, Nathan Self, Chang-Tien Lu, and Naren Ramakrishnan. Geospatial clustering for balanced and proximal schools. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 34, pages 13358–13365, 2020.

[47] Fanglan Chen, Zhiqian Chen, Subhodip Biswas, Shuo Lei, Naren Ramakrishnan, and Chang-Tien Lu. Graph convolutional networks with kalman filtering for traffic prediction. In *Proceedings of the 28th international conference on advances in geographic information systems*, pages 135–138, 2020.

[48] Zhiqian Chen, Gaurav Kolhe, Setareh Rafatirad, Chang-Tien Lu, Sai Manoj PD, Houman Homayoun, and Liang Zhao. Estimating the circuit de-obfuscation runtime based on graph deep learning. In *2020 Design, Automation & Test in Europe Conference & Exhibition (DATE)*, pages 358–363. IEEE, 2020.

[49] Zhao Ding, Zhiqian Chen, Tianyi Ma, Chang-Tien Lu, Wenhui Ma, and Leon Shaw. Predicting the hydrogen release ability of libh4-based mixtures by ensemble machine learning. *Energy Storage Materials*, 27:466–477, 2020.

[50] Zhao Ding, Shaoyuan Li, Yang Zhou, Zhiqian Chen, Weijie Yang, Wenhui Ma, and Leon Shaw. Libh4 for hydrogen storage-new perspectives. *Nano Materials Science*, 2(2):109–119, 2020.

[51] Jianfeng He, Xuchao Zhang, Shuo Lei, Zhiqian Chen, Fanglan Chen, Abdulaziz Alhamadani, Bei Xiao, and ChangTien Lu. Towards more accurate uncertainty estimation in text classification. In *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pages 8362–8372, 2020.

[52] Subhodip Biswas, Fanglan Chen, Zhiqian Chen, Andreea Sistrunk, Nathan Self, Chang-Tien Lu, and Naren Ramakrishnan. Regal: A regionalization framework for school boundaries. In *Proceedings of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, pages 544–547, 2019.

[53] Taoran Ji, Zhiqian Chen, Nathan Self, Kaiqun Fu, Chang-Tien Lu, and Naren Ramakrishnan. Patent citation dynamics modeling via multi-attention recurrent networks. In *Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence (IJCAI-19)*, 2019.

[54] Ying Zhang, Xingfeng He, Zhiqian Chen, Qiang Bai, Adelaide M Nolan, Charles A Roberts, Debasish Banerjee, Tomoya Matsunaga, Yifei Mo, and Chen Ling. Unsupervised discovery of solid-state lithium ion conductors. *Nature communications*, 10(1):5260, 2019.

[55] Zhiqian Chen, Feng Chen, Rongjie Lai, Xuchao Zhang, and Chang-Tien Lu. Rational neural networks for approximating graph convolution operator on jump discontinuities. In *2018 IEEE International Conference on Data Mining (ICDM)*, pages 59–68. IEEE, 2018.

[56] Kaiqun Fu, Zhiqian Chen, and Chang-Tien Lu. Streetnet: preference learning with convolutional neural network on urban crime perception. In *Proceedings of the 26th ACM SIGSPATIAL international conference on advances in geographic information systems*, pages 269–278, 2018.

[57] Manu Shukla, Zhiqian Chen, and Chang-Tien Lu. Dimpl: a distributed in-memory drone flight path builder system. *Journal of Big Data*, 5:1–29, 2018.

[58] Bingsheng Wang, Zhiqian Chen, Arnold P Boedihardjo, and Chang-Tien Lu. Virtual metering: An efficient water disaggregation algorithm via nonintrusive load monitoring. *ACM Transactions on Intelligent Systems and Technology (TIST)*, 9(4):1–30, 2018.

[59] Xuchao Zhang, Liang Zhao, Zhiqian Chen, and Chang-Tien Lu. Distributed self-paced learning in alternating direction method of multipliers. *arXiv preprint arXiv:1807.02234*, 2018.

[60] Zhiqian Chen, Chih-Wei Wu, Yen-Cheng Lu, Alexander Lerch, and Chang-Tien Lu. Learning to fuse music genres with generative adversarial dual learning. In *2017 IEEE International Conference on Data Mining (ICDM)*, pages 817–822. IEEE, 2017.

[61] Zhiqian Chen, Xuchao Zhang, Arnold P Boedihardjo, Jing Dai, and Chang-Tien Lu. Multimodal storytelling via generative adversarial imitation learning. In *Proceedings of the Twenty-Sixth International Joint Conference on Artificial Intelligence (IJCAI-17)*, 2017.

[62] Xuchao Zhang, Zhiqian Chen, Liang Zhao, Arnold P Boedihardjo, and Chang-Tien Lu. Traces: Generating twitter stories via shared subspace and temporal smoothness. In *2017 IEEE International Conference on Big Data (Big Data)*, pages 1688–1693. IEEE, 2017.

[63] Xuchao Zhang, Liang Zhao, Zhiqian Chen, Arnold P Boedihardjo, Jing Dai, and Chang-Tien Lu. Trendi: Tracking stories in news and microblogs via emerging, evolving and fading topics. In *2017 IEEE International Conference on Big Data (Big Data)*, pages 1590–1599. IEEE, 2017.

[64] Xuchao Zhang, Zhiqian Chen, Weisheng Zhong, Arnold P Boedihardjo, and Chang-Tien Lu. Storytelling in heterogeneous twitter entity network based on hierarchical cluster routing. In *2016 IEEE International Conference on Big Data (Big Data)*, pages 1522–1531. IEEE, 2016.

[65] Manu Shukla, Ziqian Chen, and Chang-Tien Lu. Difpl: Distributed drone flight path builder system. In *2015 1st International Conference on Geographical Information Systems Theory, Applications and Management (GISTAM)*, pages 1–10. IEEE, 2015.

[66] Zhiqian Chen and Wenya Feng. Detecting impolite crawler by using time series analysis. In *2013 IEEE 25th International Conference on Tools with Artificial Intelligence*, pages 123–126. IEEE, 2013.