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Zhiqian Chen

Employment History

2020–present **Assistnat Professor**, *Mississippi State University*.
2014–2020 **Research Assistant**, *Virginia Tech*.

Education

2014–2020 **PhD, Computer Science**, *Virginia Tech*, Falls Church, Virginia.
2010–2013 **MS, Software Engineering**, *Peking University*, China.
2005–2009 **BE, Software Engineering**, *Huazhong Univ. of Sci. & Tech.*, China.
2007–2009 **BA, Japanese Language**, *Huazhong Univ. of Sci. & Tech.*, China.

Awards & Patent

Award Best Paper Award at ACM SIGSPATIAL 2020
Award Best Paper Award at GISTAM 2015
U.S. Patent High-throughput method to predict bulk properties of inorganic materials
Award Outstanding Contribution Award, 2016, Toyota Research Institute, North America (TRI-NA)

Editor/Review Service

Reviewer International Conference on Machine Learning (*ICML*), 2021, 2022
Reviewer International Conference on Learning Representations (*ICLR*), 2022
Reviewer Neural Information Processing System (*NeurIPS*), 2019, 2020, 2021
Reviewer AAAI conference on Artificial Intelligence (*AAAI*), 2020, 2021, 2022
Reviewer International Joint Conference on Artificial Intelligence (*IJCAI*), 2022
Reviewer ACM SIG on Knowledge Discovery and Data Mining (*KDD*), 2020, 2022
Reviewer ACM SIG on Information Retrieval (*SIGIR*), 2020, 2022
Reviewer Knowledge-Based Systems, 2021
Reviewer Reviewer, IEEE Transactions on Knowledge and Data Engineering (*TKDE*), 2019, 2020
Reviewer Reviewer, ACM Transactions on Knowledge Discovery from Data (*TKDD*), 2021
Reviewer Reviewer, Neurocomputing by Elsevier, 2019, 2020, 2021
Reviewer Scientific Reports by Nature, 2021
Reviewer Reviewer, MDPI Sensors 2021
Review Editor, Editorial Board Frontiers in Big Data - Data Science
Panelist NSF Panel Review

Publications

[1] Kaiqun Fu, Taoran Ji, Nathan Self Zhiqian Chen, and Chang-Tien Lu. Hastgcn: A hierarchical attention-based spatiotemporal graph convolutional network for traffic incident impact forecasting. In *2021 IEEE International Conference on Big Data (Big Data)*. IEEE, 2021 (accepted).

[2] Guangyu Meng, Qisheng Jiang, Kaiqun Fu, Chang-Tien Lu Beiyu Lin, and Zhqian Chen. Early forecast of traffic accident impact based on a single-snapshot observation. In *Proceedings of the AAAI Conference on Artificial Intelligence*, 2022 (accepted).

[3] Guangyu Meng, Qisheng Jiang, Kaiqun Fu, Chang-Tien Lu Beiyu Lin, and Zhqian Chen. Early forecast of traffic accident impact based on a single-snapshot observation. In *Proceedings of the 2021 SIAM International Conference on Data Mining (SDM)*. SIAM.

[4] Jason Wang, Kaiqun Fu, Zhiqian Chen, and Chang-Tien Lu. Augmentation of chinese character representations with compositional graph learning. In *Proceedings of the AAAI Conference on Artificial Intelligence*, 2022 (accepted).

[5] Lei Zhang, Zhiqian Chen, Chang-Tien Lu, and Liang Zhao. "dynamics on graphs" to "dynamics of graphs": an adaptive echo-state network solution. In *Proceedings of the AAAI Conference on Artificial Intelligence*, 2022 (accepted).

[6] 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. In *Proceedings of the AAAI Conference on Artificial Intelligence*, 2022 (accepted).

[7] 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 united framework for graph neural networks. *arXiv preprint arXiv:2107.10234*, 2021.

[8] 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, 2021.

[9] 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.

[10] Guoming Li, Yanbo Huang, Zhiqian Chen, Gary D Chesser, 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.

[11] 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.

[12] Chen Ling, Ying Zhang, Zhiqian Chen, and Debasish Banerjee. High-throughput method to predict bulk properties of inorganic materials, September 15 2020. US Patent 10,773,959.

[13] 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.

[14] 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.

[15] Zhiqian Chen. *Graph Neural Networks: Techniques and Applications*. PhD thesis, Virginia Tech, 2020.

[16] 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 survey on graph neural networks. 2020.

[17] 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.

[18] 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.

[19] 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.

[20] 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.

[21] 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.

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

[23] 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):1–7, 2019.

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[25] 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.

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

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[29] 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.

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[36] 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.