JUNXIANG WANG

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RESEARCH INTERESTS

Data Mining and Machine Learning, Social Media Mining, Deep Learning on Graph, Nonconvex and Distributed Optimization.

EDUCATION

Ph.D. in Computer Science and Informatics	*Dec 2022*
Emory University, Atlanta, GA	**GPA:3.96**
M.S. in Applied Information Technology	*August 2020*
George Mason University, Fairfax, VA	**GPA:3.98**
B.S. in Computer Science and Technology	*June 2012*
East China Normal University, Shanghai, China	**GPA:3.4**

ACADEMIC EXPERIENCE

Jan 2023-Present	**Researcher, NEC Laboratories America, Inc.**

PEER-REVIEWED PUBLICATIONS

Journal Publications

1. Junxiang Wang, Hongyi Li (first-coauthor), Zheng Chai, Yongchao Wang, Yue Cheng, and Liang Zhao. 2022. Towards Quantized Model Parallelism for Graph-Augmented MLPs Based on Gradient-Free ADMM Framework. IEEE Transactions on Neural Networks and Learning Systems, (impact factor: 14.255).

2. Junxiang Wang, Hongyi Li, Liang Zhao. 2022. Accelerated Gradient-free Neural Network Training by Multi-convex Alternating Optimization. Neurocomputing (Impact Factor: 5.719), vol.487, 130-143. Short version is in the ICML 2021 Workshop on Beyond First-Order Methods in ML systems.

3. Junxiang Wang, Liang Zhao. 2021. Nonconvex Generalization of Alternating Direction Method of Multipliers for Nonlinear Equality Constrained Problems. Results in Control and Optimization. 2:100009.

4. Junxiang Wang, Liang Zhao, Yanfang Ye, and Yuji Zhang. 2018. Adverse event detection by integrating Twitter data and VAERS. Journal of Biomedical Semantics (Impact Factor: 1.845), 9, 19 (2018) DOI:`10.1186/s13326-018-0184-y`, 9(1):1-10.

5. Liang Zhao, Junxiang Wang, Feng Chen, Chang-Tien Lu, Naren Ramakrishnan. 2017. "Spatial Event Forecasting in Social Media with Geographically Hierarchical Regularization". Proceedings of the IEEE (Impact Factor: 9.237), vol. 105, no. 10, pp. 1953-1970, Oct 2017.

6. Junxiang Wang, Weiming Yu, Zhibin Chen, Hengda Li, Zhenran Jiang. Predicting Drug-Target Interactions of Nuclear Receptors Based on Molecular Descriptors Information. Letters in Drug Design & Discovery (Impact Factor: 1.099), vol. 10, no. 10, 989-994, 2013.

7. Weiming Yu, Yan Yan, Qing Liu, Junxiang Wang and Zhenran Jiang. Predicting drug–target interaction networks of human diseases based on multiple feature information. Pharmacogenomics (Impact Factor: 2.638), vol. 14,no. 14, 1701-1707, 20, 2013

8. Zhenran Jiang, Ran Tao, Lei Du, Weiming Yu and Junxiang Wang. Using Network-Based Approaches to Predict Ligands of Orphan Nuclear Receptors. Current Bioinformatics (Impact Factor: 4.850), vol.7, no.4, 411-414, 2012.

9. Ran Tao, Zhenran Jiang, Weiming Yu and Junxiang Wang. Predicting Coupling Specificity of GPCRs Based on the Optimization of the Coupling Regions. Combinatorial chemistry & high throughput screening (Impact Factor: 1.714) vol.15, no.9, 770-774, 2012.

10. Weiming Yu, Zhengyan Jiang, Junxiang Wang and Ran Tao. Using feature selection technique for drug-target interaction networks prediction. Current medicinal chemistry (Impact Factor: 4.74) vol.18, no.36, 5687-5693, 2011.

Conference Publications

1. Chen Ling, Junji Jiang, Junxiang Wang, My Thai, Lukas Xue, James Song, Meikang Qiu, and Liang Zhao. Deep Graph Representation Learning and Optimization for Influence Maximization. In proceedings of the International Conference on Machine Learning (ICML 2023), (acceptance rate: 27.9%), Honolulu, Hawaii, USA, July 2023.

2. Guangji Bai, Johnny Torres, Junxiang Wang, Zhao Liang, Cristina Abad, and Carmen Vaca. Sign-Regularized Multi-Task Learning. in Proceedings of SIAM International Conference on Data Mining (SDM 2023), (acceptance rate: 27.4%), Minneapolis, Minn, USA, Apr 2023.

3. Chen Ling, Tanmoy Chowdhury, Junji Jiang, Junxiang Wang, Xuchao Zhang, Haifeng Chen, and Liang Zhao. DeepAR: Deep Graph Representation Learning and Optimization for Analogical Reasoning. in Proceedings of the IEEE International Conference on Data Mining (ICDM 2022), short paper (acceptance rate: 20%), Orlando, FL, USA, Nov 2022.

4. Chen Ling, Jungi Jiang, Junxiang Wang, Liang Zhao. 2022. SL-VAE: Variational Autoencoder for Source Localization in Graph Information Diffusion. The 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2022) (Acceptance Rate: 14.99%), accepted, 2022.

5. Junxiang Wang, Junji Jiang, Liang Zhao. 2022. An Invertible Graph Diffusion Model for Source Localization. The 21st Web Conference (WWW 2022), (Acceptance Rate: 17.7%), accepted, in press.

6. Junxiang Wang and Liang Zhao. Convergence and Applications of Alternating Direction Method of Multipliers on the Multi-convex Problems. The 26th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2022) (Acceptance Rate: 19.3%), accepted, in press.

7. Hongyi Li, Junxiang Wang, Yongchao Wang, Yue Cheng and Liang Zhao. Community-based Layerwise Distributed Training of Graph Convolutional Networks. NeurIPS 2021 Workshop on Optimization for Machine Learning (OPT 2021).

8. Junxiang Wang, Zheng Chai, Yue Cheng, and Liang Zhao. 2020. Toward Model Parallelism for Deep Neural Network based on Gradient-free ADMM Framework. In Proceedings of the 20th International Conference on Data Mining (ICDM 2020),

(Acceptance Rate: 9.8%), November 17-20, 2020, Virtual Event, Sorrento, Italy, pp. 591-600.

9. Junxiang Wang, Zheng Chai, Yue Cheng, Liang Zhao. Tunable Subnetwork Splitting for Model-parallelism of Neural Network Training. ICML 2020 Workshop on Beyond First-Order Methods in ML systems.

10. Junxiang Wang and Liang Zhao. The Application of Multi-block ADMM on Isotonic Regression Problems. 11th Workshop on Optimization for Machine Learning (OPT 2019), co-located with NeurIPS 2019.

11. Junxiang Wang, Fuxun Yu, Xiang Chen, and Liang Zhao. ADMM for Efficient Deep Learning with Global Convergence. in Proceedings of the 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2019), research track (Acceptance Rate: 14.2%), pp. 111-119, Alaska, USA, Aug 2019.

12. Junxiang Wang, Yuyang Gao, Andreas Züfle, Jingyuan Yang, and Liang Zhao. Incomplete Label Uncertainty Estimation for Petition Victory Prediction with Dynamic Features. International Conference on Data Mining (ICDM 2018), regular paper (Acceptance Rate: 8.86%), pp. 537-546, Singapore, Dec 2018.

13. Junxiang Wang, Liang Zhao, and Yanfang Ye. Semi-supervised Multi-Instance Learning for Flu Shot Adverse Event Detection. IEEE International Conference on Big Data (BigData 2018), (Acceptance Rate: 18.9%), pp. 851-860, Seattle, USA, Dec 2018.

14. Junxiang Wang and Liang Zhao. Multi-instance Domain Adaptation for Vaccine Adverse Event Detection. 27th International World Wide Web Conference (WWW 2018), (Acceptance Rate: 14.8%), pp. 97-106, Lyon, FR, Apr 2018.

15. Liang Zhao, Junxiang Wang, and Xiaojie Guo. Distant-supervision of heterogeneous multitask learning for social event forecasting with multilingual indicators. Thirty-Second AAAI Conference on Artificial Intelligence (AAAI 2018), Oral presentation (Acceptance Rate: 11.0%), pp. 4498-4505, New Orleans, US, Feb 2018.

PATENTS

- Xuchao Zhang, Yanchi Liu, Bo Zong, Wei Cheng, Haifeng Chen, and Junxiang Wang. Cross-lingual zero-shot transfer via semantic and synthetic representation learning, March 2022.

PROFESSIONAL SERVICES

Conference Technical Program Committee Services

- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2023).

- Optimization for Machine Learning by NeurIPS (OPT 2022).

- Empirical Methods in Natural Language Processing (EMNLP 2022).

- Conference on Neural Information Processing Systems (NeurIPS 2022,2023).

- Asian Conference on Machine Learning (ACML 2022).

- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2022).

- International Joint Conference on Neural Networks (IJCNN 2022).

- International Joint Conference on Artificial Intelligence (IJCAI 2022, 2023).

- International Workshop on Deep Learning on Graphs by SIGKDD (DLG-KDD 2022,2023).

- International Conference on Computer Science and Application Engineering (CSAE 2019).

- Student volunteer: ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2019).

Journal Reviewer
- Reviewer, Optimization Letters (OL): 2022.

- Reviewer, Transactions on Big Data (TBD): 2022.

- Reviewer, Transactions on Knowledge and Data Engineering (TKDE): 2022.

- Reviewer, Expert Systems with Applications (ESWA), 2022.

- Reviewer, Frontiers in Public Health, 2020.

- Reviewer, Knowledge Based Systems (KNOSYS): 2022.

- Reviewer, Applied Artificial Intelligence (UAAI): 2021.

- Reviewer, European Journal of Operational Research (EJOR): 2019.

- Reviewer, Numerical Algorithms (NUMA): 2021.

- Reviewer, Asian Conference on Machine Learning (ACML) Journal track: 2022.

- Reviewer, Big Data Research (BDR): 2022.

- Reviewer, Engineering Applications of Artificial Intelligence (EAAI): 2022.

- Reviewer, Intelligent Systems with Applications (ISWA): 2022.

- Reviewer, SoftwareX: 2022.

INVITED TALKS

- Accelerated Gradient-free Neural Network Training by Multi-convex Alternating Optimization. Association of European Operational Research Societies Conference (EURO 2022), Espoo, Finland, July 2022.

- Towards Quantized Model Parallelism for Graph-Augmented MLPs Based on Gradient-Free ADMM Framework. INFORMS Optimization Society Conference (IOS 2022), Greenville, SC, United States, March 2022.

- Power of Alternating Direction Method of Multipliers(ADMM) in deep learning. Modeling and Optimization: Theory and Applications (MOPTA 2021), Bethlehem, PA,United States, August 2021.

AWARDS

- Student Travel Awards: KDD 2019, ICDM 2018, 2020.

- Meritorious Winner in the 2011 Mathematical Contest in Modeling (MCM) in the United States.

- Second Prize in the 2010 Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM) in China.

- Second Prize in the 2009 Undergraduate Mathematical Contest in Modeling by East China Normal University.