Junxiang Wang

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EDUCATION

Department of Computer Science, Emory University, Atlanta, GA, USA 2020-present

Ph.D. in Computer Science

Department of Information Science and Technology, George Mason University 2017-2020

M.S. in Applied Information Technology GPA 3.98/4.0

Department of Computer Science, East China Normal University 2008-2012

B.S in Computer Science GPA 3.4/4.0

PUBLICATIONS

I have published 18 papers, 11 of which are first-authored papers.

Conference Papers

9. Chen Ling, Junji Jiang, **Junxiang Wang** and Liang Zhao. SL-VAE: Variational Autoencoder for Source Localization. in Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2022), research track (acceptance rate: 15.0%), Washington D.C, USA, Aug 2022.

8. **Junxiang Wang**, Junji Jiang, and Liang Zhao. An Invertible Graph Diffusion Neural Network for Source Localization. 31th International World Wide Web Conference (WWW 2022), (acceptance rate: 17.7%), Lyon, FR, Apr 2022.

7. **Junxiang Wang** and Liang Zhao. Convergence and Applications of Alternating Direction Method of Multipliers on the Multi-convex Problems. 26th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2022), (acceptance rate: 19.3%), Chengdu, China, May 2022.

6. **Junxiang Wang**, Zheng Chai,Yue Cheng, Liang Zhao. Toward Model Parallelism for Deep Neural Network based on Gradient-free ADMM Framework. in Proceedings of the IEEE International

Conference on Data Mining (ICDM 2020), regular paper (acceptance rate: 9.8%), Sorrento, Italy, Nov 2020.

5. **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%), Alaska, USA, Aug 2019.

4. **Junxiang Wang**, Liang Zhao, and Yanfang Ye. Semi-supervised Multi-instance Interpretable Models for Flu Shot Adverse Event Detection. 2018 IEEE International Conference on Big Data (BigData 2018) (acceptance rate: 18.9%), Seattle, USA, Dec 2018.

3. **Junxiang Wang**, Yuyang Gao, Andreas Zufle, Jingyuan Yang, and Liang Zhao. Incomplete Label Uncertainty Estimation for Petition Victory Prediction with Dynamic Features. in Proceedings of the IEEE International Conference on Data Mining (ICDM 2018), regular paper (acceptance rate: 8.9%), Singapore, Dec 2018.

2. **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%), Lyon, FR, Apr 2018.

1. 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.

Journal papers

9. **Junxiang Wang**, Hongyi Li, and Liang Zhao. Accelerated Gradient-free Neural Network Training by Multi-convex Alternating Optimization. Neurocomputing, (impact factor: 5.719), 2022.

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

7. Liang Zhao, **Junxiang Wang**, Feng Chen, Chang-Tien Lu and Naren Ramakrishnan. “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**, Liang Zhao, Yanfang Ye, and Yuji Zhang. Adverse event detection by integrating Twitter data and VAERS. Journal of Biomedical Semantics, (impact factor: 1.845), 2018

5. **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 10 (10), 989-994, 2013.

4. 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 14 (14), 1701-1707, 20, 2013.

3. Zhenran Jiang, Ran Tao, Lei Du, Weiming Yu and **Junxiang Wang**. Using Network-Based Approaches to Predict Ligands of Orphan Nuclear Receptors. Current Bioinformatics 7 (4), 411-414, 2012.

2. 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 15 (9), 770-774, 2012.

1. Weiming Yu, Zhengyan Jiang, **Junxiang Wang** and Ran Tao. Using feature selection technique for drug-target interaction networks prediction. Current medicinal chemistry 18 (36), 5687-5693, 2011.

Workshop papers

Hongyi Li, **Junxiang 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).

Junxiang Wang, Hongyi Li, and Liang Zhao. Accelerated Gradient-free Neural Network Training by Multi-convex Alternating Optimization. A short version has been accepted in ICML 2021 Workshop on Beyond First-Order Methods in ML systems.

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.

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.

Preprints

Chen Ling, Junji Jiang, Tanmoy Chowdhury, **Junxiang Wang**, Xuchao Zhang, Haifeng Chen, and Liang Zhao. DeepAR: Deep Graph Representation Learning and Optimization for Analogical Reasoning.

Junxiang Wang, Hongyi Li, and Liang Zhao. Proximal ADMM Algorithms for Multi-convex Problems.

Junxiang Wang, Junji Jiang, and Liang Zhao. An Invertible Bi-Lipschitz Surrogate Model for Black-box Graph Inverse Problems.

Hongyi Li, **Junxiang Wang**, Yongchao Wang, Yue Cheng and Liang Zhao. Community-based Layerwise Distributed Training of Graph Convolutional Networks.

Chen Ling, Junji Jiang, **Junxiang Wang**, Renhao Xue and Zhao Liang. DeepIM: Deep Graph Representation Learning and Optimization for Influence Maximization.

Junxiang Wang, Hongyi Li, Liang Zhao. A Convergent ADMM Framework for Efficient Neural Network Training.

Junxiang Wang, Xuchao Zhang, Bo Zong, Yanchi Liu, Wei Cheng, Jingchao Ni, Haifeng Chen, and Liang Zhao. Do Multi-Lingual Pre-trained Language Models Reveal Consistent Token Attributions in Different Languages?

Yuyang Gao,**Junxiang Wang**, Wei Wang, Xin Deng, Hamed Zamani, Xiaohan Yan, Yan Guo, Ahmed Awadallah, Yanfang Ye, and Liang Zhao. Asynchronous Semi-supervised Representation Learning for Email Heterogeneous Networks.

Junxiang Wang, Hongyi Li (first-coauthor), Zheng Chai, Yongchao Wang, Yue Cheng, and Liang Zhao. Towards Quantized Model Parallelism for Graph-Augmented MLPs Based on Gradient-Free ADMM Framework. Preprint.

Johnny Torres, Guangji Bai, **Junxiang Wang**, Liang Zhao, Carmen Vaca, Cristina Abad. Sign-regularized Multi-task Learning.

Junxiang Wang, Liang Zhao, Yanfang Ye and Houman Homayoun. Interpretability Evaluation Framework for Deep Neural Networks.

INVITED TALKS

EURO 2022 Espoo, Finland.

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

Power of Alternating Direction Method of Multipliers (ADMM) in deep learning. MOPTA 2021. Lehigh University. PA. August 2021.

HONORS AND AWARDS

Student Travel Award: ICDM 2020, KDD 2019, ICDM 2018

SERVICE

Review 52 papers independently, most of which are from top-tier journals and conferences. They are shown as follows:

Journal Reviewer: European Journal of Operational Research, IEEE Transactions on Knowledge and Data Engineering, Expert Systems with Applications, Numerical Algorithms, Frontier in Public Health, Applied Artificial Intelligence.

Conference Reviewer: IJCAI 2022, IJCNN 2022, ECML-PKDD 2022, ACML 2022, NIPS 2022.

MEDIA CONVERGE

ADMM for Efficient Deep Learning with Global Convergence via Synced.