Nan Jiang

| **Contact Information** | Department of Computer Science
University of Texas - El Paso, TX, US | **E-mail:** njiang@utep.edu
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Education

Purdue University, IN, USA   Aug 2018 – May 2025
Ph.D. in Computer Science. Advisor: Yexiang Xue.
PhD Thesis: Integrating Automated Reasoning with Machine Learning for Structured Prediction and Scientific Discovery.

Beihang University, Beijing, China   Sep 2015 – Jan 2018
M.A.Eng. in Computer Science. Advisor: Wenge Rong.
National Scholarship

Zhejiang University of Technology, Zhejiang, China   Sep 2011 – Jun 2015
B.Eng. in Computer Science.
Outstanding Graduate Student.

Appointments

University of Texas - El Paso, USA   Sep 2025
Assistant Professor in the Department of Computer Science

Amazon Search, USA   May 2021 - Aug 2021, May 2020 - Aug 2020
Research Intern on the Product Search group.

Microsoft Research Asia, Beijing, China   Dec 2016 - Sep 2017
Research Intern in Speech group.

Publications

20 Jinzhao Li*, **Nan Jiang***, Yexiang Xue. An Exact Solver for Satisfiability Modulo Counting with Probabilistic Circuits. In *Forty-Second International Conference on Machine Learning (ICML)*, 2025. [Acceptance rate 27%]

19 **Nan Jiang**, Md Nasim, Yexiang Xue. Active Symbolic Discovery of Ordinary Differential Equations via Phase Portrait Sketching. In *Thirty-Ninth AAAI Conference on Artificial Intelligence (AAAI)*, 2025. [Acceptance rate 23.4%]

18 **Nan Jiang**, Md Nasim, Yexiang Xue. Vertical Symbolic Regression via Deep Policy Gradient. In *Proceedings of the Thirty-Third International Joint Conference on Artificial Intelligence (IJCAI)*, 2024. [Oral] [Acceptance rate 14.5%]

17 **Nan Jiang**, Yexiang Xue. Racing Control Variable Genetic Programming for Symbolic Regression. In *Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI)*, 2024. [Acceptance rate 23.75%]

16 Jinzhao Li, **Nan Jiang** and Yexiang Xue. Solving Satisfiability Modulo Counting for Symbolic and Statistical AI Integration with Provable Guarantees. In *Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI)*, 2024. [Acceptance rate 23.75%]

15 **Nan Jiang**, Jinzhao Li, Yexiang Xue. A Tighter Convergence Proof of Reverse Experience Replay. In *The Reinforcement Learning Journal*, 2024.

14 **Nan Jiang**, Yexiang Xue. Symbolic Regression via Control Variable Genetic Programming. In *Machine Learning and Knowledge Discovery in Databases: Research Track - European Conference (ECML/PKDD)*, 2023. [Oral] [Acceptance rate 24%]

13 **Nan Jiang***, Yi Gu*, Yexiang Xue. Learning Markov Random Fields for Combinatorial Structures via Sampling through Lovász Local Lemma. In *Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI)*, 2023. [Acceptance rate 19.6%]

12 **Nan Jiang**, Maosen Zhang, Willem-Jan van Hoeve, Yexiang Xue. Constraint Reasoning Embedded in Structural Prediction. In *Journal of Machine Learning Research (JMLR)*, 2022.

11 **Nan Jiang**, Chen Luo, Vihan Lakshman, Yesh Dattatreya, Yexiang Xue. Massive Text Normalization via an Efficient Randomized Algorithm. In *The ACM Web Conference (WWW)*, 2022. [Acceptance rate 17.7%]

10 Maxwell J Jacobson, Case Q Wright, **Nan Jiang**, Gustavo Rodriguez-Rivera, Yexiang Xue. Task detection in continual learning via familiarity autoencoders. In *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, 2022.

9 **Nan Jiang***, Fan Ding*, Jianzhu Ma, Jian Peng, Jinbo Xu, and Yexiang Xue. PALM: Probabilistic Area Loss Minimization for Protein Sequence Alignment. In *Proceedings of the Thirty-Seventh Conference on Uncertainty in Artificial Intelligence (UAI)*, 2021. [Oral] [Acceptance rate: 26.5%]

8 Libin Shi, Wenge Rong, Shijie Zhou, **Nan Jiang**, and Zhang Xiong. A dual channel class hierarchy based recurrent language modeling. In *Neurocomputing*, 2020.

7 Maosen Zhang, **Nan Jiang**, Lei Li, Yexiang Xue. Language Generation via Combinatorial Constraint Satisfaction: A Tree Search Enhanced Monte-Carlo Approach. In *Findings of the Association for Computational Linguistics: (EMNLP)*, 2020. [Acceptance Rate 37.9%]

6 Zhen Xu, **Nan Jiang**, Bingquan Liu, Wenge Rong, Bowen Wu, Baoxun Wang, Zhuoran Wang, and Xiaolong Wang. LSDSCC: A Large Scale Domain-Specific Conversational Corpus for Response Generation with Diversity Oriented Evaluation Metrics. In *NAACL-HLT*, 2018. [Acceptance rate 29.4%]

5 **Nan Jiang**, Wenge Rong, Min Gao, Yikang Shen Zhang Xiong. Exploration of Tree-based Hierarchical Softmax for Recurrent Language Models. In *Proceedings of the Twenty-Sixth International Joint Conference on Artificial Intelligence (IJCAI)*, 2017. [oral] [Acceptance rate 26.0%]

4 Yikang Shen, Wenge Rong, **Nan Jiang**, Baolin Peng, Jie Tang and Zhang Xiong. Word Embedding Based Correlation Model for Question/Answer Matching. In *Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence (AAAI)*, 2017. [Acceptance rate 24.6%]

3 **Nan Jiang**, Wenge Rong, Yifan Nie, Yikang Shen, Zhang Xiong. Event Trigger Identification with Noise Contrastive Estimation. In *IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)*, 2017. [JCR Q1] [Impact factor 3.6]

2 **Nan Jiang**, Wenge Rong, Baolin Peng, Yifan Nie, Zhang Xiong. An empirical analysis of different sparse penalties for autoencoder in unsupervised feature learning. In *Proceedings of the 2015 International Joint Conference on Neural Networks (IJCNN)*, 2015.

1 **Nan Jiang**, Wenge Rong, Baolin Peng, Yifan Nie and Zhang Xiong. Modeling Joint Representation with Tri-Modal DBNs for Query and Question Matching. In *IEICE Transactions on Information and Systems*, 2015.

Preprint

1. **Nan Jiang**, Ziyi Wang, Yexiang Xue. EGG-SR: Embedding Symbolic Equivalence into Symbolic Regression via Equality Graph.

2. Ziyi Wang, **Nan Jiang**, Guang Lin, Qifan Song. SQS: Bayesian DNN Compression through Sparse Quantized Sub-distributions.

3. Haoyang Zheng, Xinyang Liu, Cindy Xiangrui Kong, **Nan Jiang**, Zheyuan Hu, Weijian Luo, Wei Deng, Guang Lin. Ultra-Fast Language Generation via Discrete Diffusion Divergence Instruct.

4. Ziyi Wang, Siva Rajesh Kasa, Ankith M S, SANTHOSH KUMAR KASA, Jiaru Zou, **Nan Jiang**, Sumit Negi, Ruqi Zhang, Qifan Song. DIVERSED: Relaxed Speculative Decoding via Dynamic Ensemble Verification. NeurIPS 2025 Efficient Reasoning workshop.

Internship

Oak Ridge National Laboratory, TN, USA   July 2024 - Aug 2024
Visiting Student

Amazon Search, CA, USA   May 2021 - Aug 2021, May 2020 - Aug 2020
Research Intern

Microsoft Research Asia, Beijing, China   Dec 2016 - Sept 2017
Research Intern

Netease Inc., Beijing, China   Jun 2016 - Dec 2016
Research Intern

Teaching

Artificial Intelligence for Scientific Discovery at CS UTEP.   2025 Fall
Instructor

Programming in C at CS Purdue.   2018 Fall, 2019 Fall
Statistical Machine Learning at CS Purdue.   2019 Spring, 2020 Fall, 2021 Fall
Artificial Intelligence at CS Purdue.   2020 Spring
Introduction to Algorithm at CS Purdue.   2021 Spring, 2022 Spring
Introduction to Artificial Intelligence at CS Purdue.   2022 Fall
Artificial Intelligence Basics at CS Purdue.   2023 Spring
Teaching Assistant

Honors

AAAI student scholarship.   2024, 2025
Kaggle - Quora Question Pairs. 8th out of 3295 teams   2017
KDD Cup - Highway Tollgates Traffic Flow Prediction. 3rd out of 3547 teams   2017
National Scholarship, Beihang University.   2017
The Second Prize Scholarship, Beihang University.   2016
Travel Grant of IEEE on IJCNN Conference, IEEE Society.   2015
Excellent Graduation Student, Zhejiang University of Technology.   2015
The First Prize Scholarship, Zhejiang University of Technology.   2012, 2013, 2014
National Scholarship, Zhejiang University of Technology.   2012

Reviewer Services

Journals: JMLR, TKDE, Artificial Intelligence Journal.
Conferences: NeurIPS, ACL, AAAI, ECML, AISTATS, ICML, UAI, AAAI and IJCAI.