

Jiechao Gao

CONTACT INFORMATION	 +1 929-213-7363  jiechao@stanford.edu  linkedin.com/in/jiechaogao  Scholar  Homepage	Y2E2 Center for Sustainable Development & Global Competitiveness Stanford University Stanford Profile Stanford, CA
STATUS	On the 2026–27 academic job market. U.S. Permanent Resident, no visa sponsorship required.	
RESEARCH INTERESTS	I build AI systems that stay reliable under real-world deployment constraints: limited resources, distributed private data, and high-stakes outputs. • Trustworthy Generation & Agents: verifiable multi-framework code generation (UI2Code), factuality & hallucination evaluation, LLM-as-judge, neuro-symbolic interpretability (ICML’26 ×2, AAAI’26 ×2, WWW’26, ACL’26, Findings of ACL’26, ICLR’26) • Industrial-Scale Multimodal Alignment & Recommendation: ID-multimodal representation alignment and distribution-aware modeling in billion-user platforms (NeurIPS’25, SIGIR’26, KDD’25 ×2, ICML’25, ACM MM’25 ×2) • Privacy-Preserving & Efficient Learning Systems: federated learning, on-device personalization, differential privacy, LLM efficiency & economic viability (NPJ AI’26, ICCPS’25, SenSys, IEEE TSC’20, IPDPS’20, EMNLP’25) • AI for High-Stakes Domains & Open Source: healthcare, smart buildings & sustainable energy, finance (FinRL ecosystem) (AAAI’26, EMNLP’25 Best Paper Nom., CHIL’23, BuildSys’24, NeurIPS’22 D&B)	
PROFESSIONAL EXPERIENCE	Stanford University Postdoc Research Associate Jul. 2025 - now • Research on trustworthy generative models and resource-efficient LLM systems, with applications in engineering and sustainability. • Advisors: Prof. Jie Wang and Prof. Michael Lepech Columbia University Associate Research Scientist Aug. 2024 - June 2025 • Federated learning, reinforcement learning, and trustworthy LLM agents for financial applications; core contributor and contest organizer of the FinRL open-source ecosystem.	
INDUSTRY EXPERIENCE	Frees Fund (VC), Beijing AI Investment Intern May 2018 - Aug. 2018	
EDUCATION	Ph.D. in Computer Science <i>University of Virginia</i> Department of Computer Science • Advisor: Prof. Bradford Campbell Master of Science in Electrical Engineering <i>Columbia University</i> Department of Electrical Engineering B.S. in Applied Physics & B.Eng. in Financial Engineering <i>Jilin University</i> Department of Physics & Department of Economics	Aug. 2018 - Aug. 2024 Charlottesville, VA Sep. 2016 - Feb. 2018 New York, NY Sep. 2012 - Jul. 2016 Changchun, Jilin

AWARDS

Google HE Faculty AI Fellowship	2026
EMNLP Industry Track Best Paper Nomination	2025
World's Top 2% Scientists (Stanford/Elsevier)	2024 & 2025
ACM BuildSys Best Paper Candidate	2024
ICPP NSF Travel Award	2023
UVA Link Lab Flash Talk Awardee	Feb. 2022
Excellent Graduation Thesis (5/242), JLU Physics Department	Jun. 2016
MCM Outstanding Winner Award	Apr. 2015
National Scholarship (Top 1%)	2013 & 2014
Manulife Financial Center Outstanding Intern Award	2014

PUBLICATIONS



4,616 Citations · H-index 29 · i10-index 54 (Google Scholar, as of Aug. 2026)

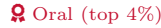
106 peer-reviewed publications (62 conference · 30 journal · 11 workshop/poster/demo · 3 book chapters) + 8 preprints + 11 main-track submissions under review, with **66 as first / co-first / corresponding author**. Venues include **ICML ×3, NeurIPS ×2 (main and D&B), ICLR, AAAI ×2, KDD ×3, WWW, SIGIR, ACM MM ×3, CVPR, the ACL family ×12 (ACL / EMNLP / EACL, incl. Industry & Findings), NPJ Artificial Intelligence, ICCPS, CHIL, IPDPS, and IEEE TSC**; with 1 Best Paper Nomination (EMNLP Industry '25), 1 Best Paper Candidate (BuildSys '24), and 2 Orals (ACM MM '25 top 4%; CHIL '23 13.3%).

* equal contribution † corresponding author

Peer-reviewed Conference Papers (with proceedings)

ICML '26	62. Zixiong Yang*, Linxiao Li*, Jiaye Lin, Binrui Wu, Xiaoyu Kang, Jiechao Gao [†] Deterministic Component Mining for Multi-framework UI2Code Generation <i>International Conference on Machine Learning</i> , 2026
ICML '26	61. Jie Wu*, Haoran Ma*, Shisong Tang, Yulin Xu, Xiaoyu Kang, Jiechao Gao [†] MulFCoder: Framework-conditioned Multi-agent for MLLM-based Multi-framework Front-end Code Generation <i>International Conference on Machine Learning</i> , 2026
ICLR '26	60. Siyuan Chen*, Hang Ding*, Kangxiao Yu, Jiechao Gao [†] GRO-RAG: Gradient-aware Re-rank Optimization for Multi-source Retrieval-Augmented Generation <i>International Conference on Learning Representations</i> , 2026
AAAI '26	59. Jiechao Gao [†] , Chang Liu, Yuangang Li S2D-ALIGN: Shallow-to-Deep Auxiliary Learning for Anatomically-Grounded Radiology Report Generation <i>AAAI Conference on Artificial Intelligence</i> , 2026
AAAI '26	58. Yuangang Li*, Yiqing Shen*, Yi Nian, Jiechao Gao , Ziyi Wang, Chenxiao Yu, Shawn Li, Jie Wang, Xiyang Hu [†] , Yue Zhao [†] Mitigating hallucinations in large language models via causal reasoning <i>AAAI Conference on Artificial Intelligence</i> , 2026
KDD '26 Blue Sky	57. Yixiang Yao, Yuhang Yao, Xinyi Fan, Jiechao Gao , Jie Wang, Minjia Zhang, Srivatsan Ravi, Carlee Joe-Wong Trustworthy Agent Network: Trust in Agent Networks Must Be Baked In, Not Bolted On <i>ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Blue Sky Track</i> , 2026
WWW '26	56. Sahil Tripathi, Gautam Siddharth Kashyap, Mehwish Nasim, Jian Yang, Jiechao Gao [†] , Usman Naseem They Said Memes Were Harmless-We Found the Ones That Hurt: Decoding Jokes, Symbols, and Cultural References <i>The ACM Web Conference</i> , 2026
SIGIR '26	55. Qi Sun, Yulin Xu, Zelin Wang, Xiaoyu Kang, Keyan Jin, Jiechao Gao [†] Distribution-aware Re-representations for Multi-Scenario Recommendations <i>International ACM SIGIR Conference on Research and Development in Information Retrieval</i> , 2026

- ACL '26 Ind.** 54. Abdullah Mohammad, Sushant Kumar Ray, Pushkar Arora, Rafiq Ali, Ebad Shabbir, Gautam Siddharth Kashyap, **Jiechao Gao**[†], Usman Naseem[†]
Are Large Language Models Economically Viable for Industry Deployment?
Annual Meeting of the Association for Computational Linguistics, Industry Track, 2026
- ACL '26 Ind.** 53. Soumedhik Bharati*, Ebad Shabbir*, **Jiechao Gao**[†]
FROST: Factual Reasoning via Optimized Stochastic Trajectories in Large Language Models during Inference
Annual Meeting of the Association for Computational Linguistics, Industry Track, 2026
- ACL Findings '26** 52. **Jiechao Gao**[†], Rohan Kumar Yadav, Yuangang Li, Yuandong Pan, Jie Wang, Ying Liu, Michael Lepech
LLM-Guided Semantic Bootstrapping for Interpretable Text Classification with Tsetlin Machines
Findings of the Association for Computational Linguistics: ACL 2026
- EMNLP '26 Ind.** 51. Muran Yu, **Jiechao Gao**, Yuandong Pan, Barney Haoyun Miao, Andrew Carter Lesh, Kincho Law, Jie Wang, Michael Lepech
EGT-KG: Evidence-Grounded Typed KG Retrieval for Practical Scientific QA with Small Language Models
Conference on Empirical Methods in Natural Language Processing, Industry Track, 2026
- EACL '26 Ind.** 50. Sushant Kumar Ray, Gautam Siddharth Kashyap, Sahil Tripathi, Nipun Joshi, Vijay Govindarajan, Rafiq Ali, **Jiechao Gao**[†], Usman Naseem
Do Clinical Question Answering Systems Really Need Specialised Medical Fine Tuning?
Conference of the European Chapter of the Association for Computational Linguistics, Industry Track, 2026
- EACL '26 Find.** 49. Gautam Siddharth Kashyap, Harsh Joshi, Niharika Jain, Ebad Shabbir, **Jiechao Gao**[†], Nipun Joshi, Usman Naseem[†]
Revealing the Truth with ConLLM for Detecting Multi-Modal Deepfakes
Conference of the European Chapter of the Association for Computational Linguistics, 2026
- ICASSP '26** 48. Ebad Shabbir*, Pushkar Arora*, Rakshita Saksainaa, Tiange Xie, **Jiechao Gao**[†]
AVATAR: Audio-Visual Adaptive Fusion via Trained Agent Reinforcement for Multimodal Deepfake Detection
IEEE International Conference on Acoustics, Speech and Signal Processing, 2026
- ICASSP '26** 47. Yuheng Li*, Taoyu Wu*, **Jiechao Gao**[†], Wei Zhu[†], Wenwen Ouyang
DemoReranker: Enhancing the In-Context Learning Capability of Multi-Modal Large Models via Demo Ranking
IEEE International Conference on Acoustics, Speech and Signal Processing, 2026
- ICASSP '26** 46. Xinyuan Huang, **Jiechao Gao**[†], Tiange Xie
Differentiable Meta-Optimization for Federated Neural Architecture Search (MO-FedNAS)
IEEE International Conference on Acoustics, Speech and Signal Processing, 2026
- ICASSP '26** 45. Taoyu Wu, Yuheng Li, **Jiechao Gao**[†], Wei Zhu[†], Ming Tan, Hui Yi Leong
EPO: Enhanced Preference Optimization with Multi-Response Data for LLMs via Stochastic Softmax
IEEE International Conference on Acoustics, Speech and Signal Processing, 2026
- ICML '25** 44. Shisong Tang*, Chao Cui*, Fan Li, **Jiechao Gao**, Hechang Chen
Calibrating Video Watch-time Predictions with Credible Prototype Alignment
International Conference on Machine Learning, 2025
- NeurIPS '25** 43. Yidong Wu*, Siyuan Chen*, Binrui Wu, Fan Li, **Jiechao Gao**[†]
Adaptive Gradient Masking for Balancing ID and MLLM-based Representations in Recommendation
Conference on Neural Information Processing Systems, 2025
- KDD '25** 42. Yulin Xu*, Chao Cui*, Shisong Tang*, Fan Li, Bing Han, Huafeng Cao, **Jiechao Gao**[†], Hechang Chen
Leveraging Label Distributions as Anchors to Enhance Video Recommendation
ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2025
- KDD '25** 41. Binrui Wu*, Shisong Tang*, Fan Li, Bing Han, Chang Meng, Jingyu Xiao, **Jiechao Gao**[†]
Aligning and Balancing ID and Multimodal Representations for Recommendation
ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2025
- ACL Findings '25** 40. Xunzhu Tang*, **Jiechao Gao***, Jin Xu*, Tiezhu Sun, Yewei Song, Saad Ezzini, Wendkūuni C. Ouédraogo, Jacques Klein, Tegawendé F. Bissyandé
SynFix: Dependency-Aware Program Repair via RelationGraph Analysis
Findings of the Association for Computational Linguistics: ACL 2025

- EMNLP '25 Ind.  Best Paper Nom.
39. Mohammad Anas Azeez*, Rafiq Ali*, Ebad Shabbir, Zohaib Hasan Siddiqui, Gautam Siddharth Kashyap, **Jiechao Gao**[†], Usman Naseem[†]
Truth, Trust, and Trouble: Medical AI on the Edge
Conference on Empirical Methods in Natural Language Processing, Industry Track, 2025
- EMNLP '25 Ind.
38. Zohaib Hasan Siddiqui*, **Jiechao Gao***, Ebad Shabbir*, Mohammad Anas Azeez, Rafiq Ali, Gautam Siddharth Kashyap, Usman Naseem[†]
LLMs on a Budget? Say HOLA
Conference on Empirical Methods in Natural Language Processing, Industry Track, 2025
- EMNLP '25 Ind.
37. Hui Yi Leong, Yuheng Li, Yuqing Wu, Wenwen Ouyang, Wei Zhu[†], **Jiechao Gao**[†], Wei Han
AMAS: Adaptively Determining Communication Topology for LLM-based Multi-agent System
Conference on Empirical Methods in Natural Language Processing, Industry Track, 2025
- EMNLP '25 Ind.
36. Yuheng Li*, **Jiechao Gao***, Wei Han, Wenwen Ouyang, Wei Zhu[†], Hui Yi Leong
FT-MDT: Extracting Decision Trees from Medical Texts via a Novel Low-rank Adaptation Method
Conference on Empirical Methods in Natural Language Processing, Industry Track, 2025
- IJCNLP-AAACL '25
35. Sahil Tripathi, MD Tabrez Nafis, Imran Hussain, **Jiechao Gao**[†]
The Confidence Paradox: Can LLM Know When It Is Wrong?
International Joint Conference on Natural Language Processing and AAACL, 2025
- ACM MM '25  Oral (top 4%)
34. Binrui Wu*, Haochen Sui*, Jiaye Lin*, **Jiechao Gao**[†], Ting Xu, Keyan Jin, Xuesong Zhang
Prototype-Guided Representation Projection for Multi-Domain Multi-Task Recommendation
ACM International Conference on Multimedia, 2025
- ACM MM '25
33. Songning Lai*, Ninghui Feng*, **Jiechao Gao***, Hao Wang, Haochen Sui, Xin Zou, Jiayu Yang, Wenshuo Chen, Lijie Hu, Hang Zhao, Xuming Hu, Yutao Yue
From Guesswork to Guarantee: Towards Faithful Multimedia Web Forecasting with TimeSieve
ACM International Conference on Multimedia, 2025
- CVPR '25
32. Yuzhi Huang*, Chenxin Li[†], Haitao Zhang, Zixu Lin, Yunlong Lin, Hengyu Liu, Wuyang Li, Xinyu Liu, **Jiechao Gao**, Yue Huang[†], Xinghao Ding, Yixuan Yuan
Track Any Anomalous Object: A Granular Video Anomaly Detection Pipeline
IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2025
- ICCPS '25
31. **Jiechao Gao***, Mingyue Tang*, Wenpeng Wang, Tushar Routh, Brad Campbell
Atlas: Ensuring Accuracy for Privacy-Preserving Federated IoT Applications
ACM/IEEE International Conference on Cyber-Physical Systems, 2025
- ICASSP '25
30. Gautam Kashyap, Zohaib Hasan Siddiqui, Mohammad Anas Azeez, Rafiq Ali, Shantanu Kumar, Navin Kamuni, **Jiechao Gao**[†]
Fooling the Forgers: A Multi-Stage Framework for Audio Deepfake Detection
IEEE International Conference on Acoustics, Speech and Signal Processing, 2025
- ICASSP '25
29. Gautam Kashyap, Harsh Joshi, Manaswi Kulahara, Rajkumar Dhakar, Atul Sajjanhar, **Jiechao Gao**[†], Sarthak Jain, Shahab Sohail
Can AI See What We Can't? Leveraging Deep Learning and Multi-Temporal Satellite Data to Revolutionize Crop Type Mapping and Yield Prediction
IEEE International Conference on Acoustics, Speech and Signal Processing, 2025
- BigData '25
28. **Jiechao Gao**, Rohan Kumar Yadav, Xinyuan Huang, Jie Wang
Enhancing Interpretability in Self-Training with Tsetlin Machines for Mitigating Noisy Pseudo-Labels
IEEE International Conference on Big Data, 2025
- BigData '25
27. Xinyuan Huang, **Jiechao Gao**[†], Jie Wang
Federated Neural Architecture Search with Model-Agnostic Meta Learning
IEEE International Conference on Big Data, 2025
- BIBM '25
26. Xinyuan Huang, **Jiechao Gao**[†]
Toward Fair and Efficient Neural Architecture Search in Heterogeneous Federated Learning
IEEE International Conference on Bioinformatics and Biomedicine, 2025
- BIBM '25
25. Xinyuan Huang, Hikaru Kurosawa, Jack Wunder, Sujit Patil, **Jiechao Gao**, Karthik Kuber, Jonathan C. Irish, Michael J. Daly
U-KAN: Hybrid Spatial-Functional Deep Learning for Tumor Depth Estimation in Fluorescence-Guided Cancer Surgery
IEEE International Conference on Bioinformatics and Biomedicine, 2025

- KSEM '25** 24. Huaibin Ye, Zuobin Ying, **Jiechao Gao**, Ximeng Liu, Jianping Cai
FedBCE: Rethinking Clustered Federated Learning for Better Clustering Efficiency
International Conference on Knowledge Science, Engineering and Management, 2025
- ASONAM '25** 23. Arpita Soni, Sahil Tripathi, Gautam Siddharth Kashyap, Manaswi Kulahara, Mohammad Anas Azeez, Zohaib Hasan Siddiqui, Nipun Joshi, **Jiechao Gao**[†]
Can We Predict Your Next Move Without Breaking Your Privacy?
IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, 2025
- SEC '25** 22. Marshall Clyburn*, Nabeel Nasir*, Md Fazlay Rabbi Masum Billah, Victor Ariel Leal Sobral, **Jiechao Gao**, Fateme Nikseresht, Brad Campbell
fReeLoaders: An IoT Ecosystem for Real-Time Deadline-Driven Task Scheduling using Reinforcement Learning
ACM/IEEE Symposium on Edge Computing, 2025
- ACM MM '24** 21. Yiyong Xiao*, Kai Shu*, Haoyi Zhang*, Baohua Yin, Wai Seng Cheang, Haoyang Wang, **Jiechao Gao**[†]
EGGesture: Entropy-Guided Vector Quantized Variational AutoEncoder for Co-Speech Gesture Generation
ACM International Conference on Multimedia, 2024
- BuildSys '24** 20. Tushar Routh, Nurani Saoda, Fateme Nikseresht, Md Fazlay Rabbi Masum Billah, **Jiechao Gao**,
🏆 Best Paper
Cand. Viswajith Govinda Rajan, Bradford Campbell
ScreenSense: Screen Activity Detection in Real-World Environments with Indoor Light Sensors
ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation, 2024
- BigData '24** 19. Jiayu Wang, **Jiechao Gao**[†]
Federated Learning with Knowledge Distillation to Mitigate Catastrophic Forgetting and Data Heterogeneity in IoV Systems
IEEE International Conference on Big Data, 2024
- BIBM '24** 18. **Jiechao Gao**[†], Yuangang Li
FedMetaMed: Federated Meta-Learning for Personalized Medication in Distributed Healthcare Systems
IEEE International Conference on Bioinformatics and Biomedicine, 2024
- BIBM '24** 17. Kai Shu*, Yuzhuo Jia*, Ziyang Zhang, **Jiechao Gao**[†]
FODA-PG for Enhanced Medical Imaging Narrative Generation: Adaptive Differentiation of Normal and Abnormal Attributes
IEEE International Conference on Bioinformatics and Biomedicine, 2024
- SciSec '24** 16. Tiange Xie, Feng Liu, **Jiechao Gao**, Yinghui Wang
Integrating Consortium Blockchain and Attribute-Based Searchable Encryption for Automotive Threat Intelligence Sharing Model
International Conference on Science of Cyber Security, 2024
- ICDM SSTDM '24** 15. **Jiechao Gao**[†], Yuangang Li, Syeda Faiza Ahmed
Fed-LDR: Federated Local Data-infused Graph Creation with Node-centric Model Refinement
IEEE ICDM International Workshop on Spatial and Spatiotemporal Data Mining, 2024
- CHIL '23** 14. Mingyu Tang*, **Jiechao Gao***, Guimin Dong, Carl Yang, Bradford Campbell, Brendan Bowman,
🏆 Oral (13.3%) Jamie Marie Zoellner, Emaad Abdel-Rahman, Mehdi Boukhechba
SRDA: Mobile Sensing based Fluid Overload Detection for End Stage Kidney Disease Patients using Sensor Relation Dual Autoencoder
PMLR Conference on Health, Inference, and Learning, 2023
- ICPP '23** 13. **Jiechao Gao**, Wenpeng Wang, Fateme Nikseresht, Viswajith Govinda Rajan, Bradford Campbell
PFDR: Personalized Federated Deep Reinforcement Learning for Residential Energy Management
International Conference on Parallel Processing, 2023
- DCOSS '23** 12. Wenpeng Wang*, Fateme Nikseresht*, Viswajith Govinda Rajan, **Jiechao Gao**, Bradford Campbell
Enabling ubiquitous occupancy detection in smart buildings: A wifi ftm-based approach
International Conference on Distributed Computing in Smart Systems and the Internet of Things, 2023
- PRCV '23** 11. Wei Cai, **Jiechao Gao**
SSCL: semi-supervised contrastive learning for industrial anomaly detection
Chinese Conference on Pattern Recognition and Computer Vision, 2023
- NeurIPS D&B '22** 10. Xiao-Yang Liu*, Ziyi Xia*, Jingyang Rui, **Jiechao Gao**, Hongyang Yang, Ming Zhu, Christina Dan Wang[†], Zhaoran Wang, Jian Guo[†]
FinRL-Meta: Market Environments and Benchmarks for Data-Driven Financial Reinforcement Learning
Conference on Neural Information Processing Systems, Datasets and Benchmarks Track, 2022

- COMSNETS '22** 9. Priyan Malarvizhi Kumar, Bharat Rawal, **Jiechao Gao**
Blockchain-enabled privacy preserving of IoT data for sustainable smart cities using machine learning
International Conference on COMMunication Systems & NETworkS, 2022
- IPSN '21** 8. Md Fazlay Rabbi Masum Billah, Nurani Saoda, **Jiechao Gao**, Bradford Campbell
BLE can see: a reinforcement learning approach for RF-based indoor occupancy detection
ACM/IEEE International Conference on Information Processing in Sensor Networks, 2021
- BuildSys '21** 7. Tong Wu*, Murtadha Aldeer*, Tahiya Chowdhury, Amber Haynes, Fateme Nikseresht, Mahsa Pahlavikhah Varnosfaderani, **Jiechao Gao**, Arsalan Heydarian, Brad Campbell, Jorge Ortiz
The smart building privacy challenge
ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation, 2021
- BuildSys '21** 6. Wenpeng Wang, Zetian Liu, **Jiechao Gao**, Nurani Saoda, Bradford Campbell
UbiTrack: Enabling scalable & low-cost device localization with onboard wifi
ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation, 2021
- ICPP '21** 5. Haoyu Wang, Haiying Shen, **Jiechao Gao**, Kevin Zheng, Xiaoying Li
Multi-agent reinforcement learning based distributed renewable energy matching for datacenters
International Conference on Parallel Processing, 2021
- ICAIF '21** 4. Xiao-Yang Liu, Hongyang Yang, **Jiechao Gao**, Christina Wang
FinRL: Deep Reinforcement Learning Framework to Automate Trading in Quantitative Finance
ACM International Conference on AI in Finance, 2021
- IPDPS '20** 3. **Jiechao Gao**, Haoyu Wang, Haiying Shen
Smartly handling renewable energy instability in supporting a cloud datacenter
IEEE International Parallel and Distributed Processing Symposium, 2020
- ICCCN '20** 2. **Jiechao Gao**, Haoyu Wang, Haiying Shen
Machine learning based workload prediction in cloud computing
International Conference on Computer Communications and Networks, 2020
- BigData '19** 1. **Jiechao Gao**, Haoyu Wang, Haiying Shen
Task failure prediction in cloud data centers using deep learning
IEEE International Conference on Big Data, 2019
- Peer-reviewed Journal Papers**
- NPJ AI '26** 30. **Jiechao Gao***, Yuangang Li*, Jie Wang, Michael Lepech, Yue Zhao, Brad Campbell
H-FedSN: Personalized Sparse Networks for Efficient and Accurate Hierarchical Federated Learning for IoT Applications
NPJ Artificial Intelligence, 2026
- IEEE TAI '26** 29. Gautam Siddharth Kashyap, Niharika Jain, Ebad Shabbir, Harsh Joshi, Usman Naseem, **Jiechao Gao[†]**
CLARITY: A Lightweight Multimodal Transformer for Harmful Content Detection
IEEE Transactions on Artificial Intelligence, 2026
- AutoCon '26** 28. Yuandong Pan, Mudan Wang, **Jiechao Gao**, Jie Wang, Michael D. Lepech, Ioannis Brilakis
LLM-enabled multi-agent framework for automated Scan-to-BIM and Scan-to-Graph reconstruction
Automation in Construction, 2026
- AI for Eng. '25** 27. Keyi Wang, Nikolaus Holzer, Ziyi Xia, Yupeng Cao, **Jiechao Gao**, Anwar Walid, Kairong Xiao, Xiao-Yang Liu Yanglet
FinRL Contests: Data-Driven Financial Reinforcement Learning Agents for Stock and Crypto Trading
Artificial Intelligence for Engineering, 2025
- ACM TMIS '24** 26. Xiao-Yang Liu, Rongyi Zhu, Daochen Zha, **Jiechao Gao**, Shan Zhong, Meikang Qiu
Differentially Private Low-Rank Adaptation of Large Language Model Using Federated Learning
ACM Transactions on Management Information Systems, 2024
- EPSR '24** 25. Aamir Nawaz, Hongtao Wang, Huiting Yang, Hammad Armghan, **Jiechao Gao[†]**
Risk-constrained probabilistic coordination in coupled transmission and distribution system
Electric Power Systems Research, 2024
- Veh. Comm. '24** 24. Mehdi Gheisari, Aminreza Karamoozian, **Jiechao Gao**, Hemn Barzan Abdalla, Shuja Ansari, Riaz Ullah Khan, Zhaoxi Fang
Accident reduction through a privacy-preserving method on top of a novel ontology for autonomous vehicles with the support of modular arithmetic
Vehicular Communications, 2024

- IEEE Access '24** 23. M. Mahad Malik, Abdullah Altamimi, Syed Ali Abbas Kazmi, Zafar Ali Khan, Muhammad Waleed Ansari, Kamran Mujahid, **Jiechao Gao**
A Full-Fledged, Multi-Agent System Representing the Architecture of Smart Cities by Balancing Energy With Optimal Electricity Forecasting, Integrating Individual Comfort, and Extracting Financial Gains
IEEE Access, 2024
- TPDS '23** 22. Haiying Shen, Haoyu Wang, **Jiechao Gao**, Rajkumar Buyya
An Instability-Resilient Renewable Energy Allocation System for a Cloud Datacenter
IEEE Transactions on Parallel and Distributed Systems, 2023
- MLJ '23** 21. Xiao-Yang Liu, Ziyi Xia, Hongyang Yang, **Jiechao Gao**, Daochen Zha, Ming Zhu, Christina Dan Wang, Zhaoran Wang, Jian Guo
Dynamic Datasets and Market Environments for Financial Reinforcement Learning
Machine Learning Journal, 2023
- ESWA '23** 20. Ahmad Almadhor, Rizwana Irfan, **Jiechao Gao**[†], Nasir Saleem, Hafiz Tayyab Rauf, Seifedine Kadry
E2E-DASR: End-to-end deep learning-based dysarthric automatic speech recognition
Expert Systems with Applications, 2023
- ASC '23** 19. Hafiz Tayyab Rauf, **Jiechao Gao**^{*}, Ahmad Almadhor, Ali Haider, Yu-Dong Zhang[†], Fadi Al-Turjman
Multi population-based chaotic differential evolution for multi-modal and multi-objective optimization problems
Applied Soft Computing, 2023
- CAAI TIT '23** 18. Nasir Saleem, **Jiechao Gao**^{*}, Rizwana Irfan, Ahmad Almadhor, Hafiz Tayyab Rauf, Yudong Zhang, Seifedine Kadry
DeepCNN: Spectro temporal feature representation for speech emotion recognition
CAAI Transactions on Intelligence Technology, 2023
- JAIHC '23** 17. Mehdi Gheisari, Amir Javadpour, **Jiechao Gao**[†], Aaqif Afzaal Abbasi, Quoc-Viet Pham, Yang Liu
PPDMIT: A lightweight architecture for privacy-preserving data aggregation in the Internet of Things
Journal of Ambient Intelligence and Humanized Computing, 2023
- JKE '23** 16. Morshadul Hasan, Thuhid Noor, **Jiechao Gao**, Muhammad Usman, Mohammad Zoynul Abedin
Rural consumers financial literacy and access to FinTech services
Journal of the Knowledge Economy, 2023
- TITS '22** 15. Gunasekaran Manogaran, **Jiechao Gao**^{*}, Tu N Nguyen
Optimizing resource and service allocations for IoT-assisted intelligent transportation systems
IEEE Transactions on Intelligent Transportation Systems, 2022
- TITS '22** 14. **Jiechao Gao**, Gunasekaran Manogaran, Tu N Nguyen, Seifedine Kadry, Ching-Hsien Hsu, Priyan Malarvizhi Kumar
A vehicle-consensus information exchange scheme for traffic management in vehicular ad-hoc networks
IEEE Transactions on Intelligent Transportation Systems, 2022
- IoT-J '22** 13. Zeeshan Siddiqui, **Jiechao Gao**[†], Muhammad Khurram Khan
An Improved Lightweight PUF-PKI Digital Certificate Authentication Scheme for the Internet of Things
IEEE Internet of Things Journal, 2022
- JBHI '22** 12. **Jiechao Gao**, Tu N Nguyen, Gunasekaran Manogaran, Ankit Chaudhary, Gai-Ge Wang
Redemptive resource sharing and allocation scheme for Internet of Things-assisted smart healthcare systems
IEEE Journal of Biomedical and Health Informatics, 2022
- TNSE '22** 11. Gunasekaran Manogaran, Tu N Nguyen, **Jiechao Gao**[†], Priyan Malarvizhi Kumar
Deep learning-based service distribution model for wireless network assisted Internet of Everything
IEEE Transactions on Network Science and Engineering, 2022
- ACM ToSN '22** 10. Guimin Dong, Mingyue Tang, Zhiyuan Wang, **Jiechao Gao**, Sikun Guo, Lihua Cai, Robert Gutierrez, Bradford Campbell, Laura E Barnes, Mehdi Boukhechba
Graph Neural Networks in IoT: A Survey
ACM Transactions on Sensor Networks, 2022
- TGCN '22** 9. Tu N Nguyen, **Jiechao Gao**[†], Gunasekaran Manogaran, R Dinesh Jackson Samuel, Mamoun Alazab
Transfer learning-aided collaborative computational method for intelligent transportation system applications
IEEE Transactions on Green Communications and Networking, 2022

- KBS '22** 8. **Jiechao Gao**^{*†}, Nasir Saleem^{*}, Muhammad Irfan Khattak, Hafiz Tayyab Rauf, Seifedine Kadry, Muhammad Shafi
DeepResGRU: Residual gated recurrent neural network-augmented Kalman filtering for speech enhancement and recognition
Knowledge-Based Systems, 2022
- IVC '22** 7. Nasir Saleem, **Jiechao Gao**^{*}, Muhammad Irfan, Elena Verdu, Javier Parra Fuente
E2E-V2SResNet: Deep residual convolutional neural networks for end-to-end video driven speech synthesis
Image and Vision Computing, 2022
- CEE '22** 6. Muhammad Irfan Khattak, Nasir Saleem, **Jiechao Gao**, Elena Verdu, Javier Parra Fuente
Regularized sparse features for noisy speech enhancement using deep neural networks
Computers and Electrical Engineering, 2022
- Agriculture '22** 5. Yuanzhi Pan, Hua Jin, **Jiechao Gao**[†], Hafiz Tayyab Rauf
Identification of Buffalo Breeds Using Self-Activated-Based Improved Convolutional Neural Networks
Agriculture, 2022
- Neurocomp. '22** 4. Adeel Ahmed, Khalid Saleem, Osman Khalid, **Jiechao Gao**[†], Umer Rashid
Trust-aware denoising autoencoder with spatial-temporal activity for cross-domain personalized recommendations
Neurocomputing, 2022
- JBHI '21** 3. Priyan Malarvizhi Kumar, Choong Seon Hong, Fatemeh Afghah, Gunasekaran Manogaran, Keping Yu, Qiaozhi Hua, **Jiechao Gao**
Clouds proportionate medical data stream analytics for internet of things-based healthcare systems
IEEE Journal of Biomedical and Health Informatics, 2021
- FGCS '21** 2. Mehdi Gheisari, Hamid Esmaeili Najafabadi, Jafar A Alzubi, **Jiechao Gao**[†], Guojun Wang, Aaqif Afzaal Abbasi, Aniello Castiglione
OBPP: An ontology-based framework for privacy-preserving in IoT-based smart city
Future Generation Computer Systems, 2021
- TSC '20** 1. **Jiechao Gao**, Haoyu Wang, Haiying Shen
Task failure prediction in cloud data centers using deep learning
IEEE Transactions on Services Computing, 2020
- Peer-reviewed Workshop, Poster & Demo Papers**
- ICWSM W '26** 11. Daniel Koo, **Jiechao Gao**, Yuandong Pan, Jie Wang, Michael D. Lepech
Perceiving Creativity in the Age of AI: How Labels, Beliefs, and Familiarity Shape Evaluations of AI-Generated and Human-Created Art
Workshop on Social Influence in the Era of LLMs (SocialLLM) at ICWSM, 2026
- ICCPS '25 Poster** 10. Tushar Routh, **Jiechao Gao**, Bradford Campbell
Data Efficient PV based Indoor Event Detection
ACM/IEEE International Conference on Cyber-Physical Systems, Poster Track, 2025
- ACL '25 SRW** 9. Ellen Yi-Ge, **Jiechao Gao**, Wei Han, Wei Zhu[†]
DRUM: Learning Demonstration Retriever for Large Multi-modal Models
Annual Meeting of the Association for Computational Linguistics Student Research Workshop, 2025
- ACL '25 SRW** 8. Juyuan Zhang, **Jiechao Gao**, Wenwen Ouyang, Wei Zhu[†], Hui Yi Leong
Time-Llama: Adapting Large Language Models for Time Series Modeling via Dynamic Low-rank Adaptation
Annual Meeting of the Association for Computational Linguistics Student Research Workshop, 2025
- NeurIPS W '25** 7. Chunlin Feng, Lijian Huang, Keyi Wang, Yupeng Cao, Ming Zhu, **Jiechao Gao**, Xiao-Yang Liu
Standard Market Environments for Financial Reinforcement Learning
NeurIPS 2025 Workshop on Generative AI in Finance, 2025
- AAAI Bridge '23** 6. Berend Jelmer Dirk Gort^{*}, Xiao-Yang Liu^{*}, Xinghang Sun, **Jiechao Gao**, Shuaiyu Chen, Christina Dan Wang.
Deep Reinforcement Learning for Cryptocurrency Trading: Practical Approach to Address Backtest Overfitting
AAAI Bridge Program on AI for Financial Services, 2023
- SenSys '22 Poster** 5. **Jiechao Gao**^{*}, Mingyue Tang^{*}, Tianhao Wang, Bradford Campbell
Pfed-ldp: A personalized federated local differential privacy framework for iot sensing data
ACM Conference on Embedded Networked Sensor Systems, Poster Track, 2022

- IPSN '22 Poster** 4. **Jiechao Gao**, Wenpeng Wang, Bradford Campbell
Residential Energy Management System Using Personalized Federated Deep Reinforcement Learning
ACM/IEEE International Conference on Information Processing in Sensor Networks, Poster Track, 2022
- NeurIPS '21 W** 3. Xiao-Yang Liu, Jingyang Rui, **Jiechao Gao**, Liuqing Yang, Hongyang Yang, Zhaoran Wang, Christina Dan Wang, Jian Guo
FinRL-Meta: A Universe of Near-Real Market Environments for Data-Driven Deep Reinforcement Learning in Quantitative Finance
Conference on Neural Information Processing Systems, 2021
- GLOBECOM W '21** 2. M Poongodi, Mounir Hamdi, **Jiechao Gao**, Hafiz Tayyab Rauf
A Novel Security Mechanism of 6G for IMD using Authentication and Key Agreement Scheme
IEEE Global Communications Conference Workshops, 2021
- SenSys W '21** 1. **Jiechao Gao**, Wenpeng Wang, Zetian Liu, Md Fazlay Rabbi Masum Billah, Bradford Campbell
Decentralized federated learning framework for the neighborhood: a case study on residential building load forecasting
ACM Conference on Embedded Networked Sensor Systems, AIChallengeIoT Workshop, 2021

Peer-reviewed Book Chapters

- Book '22** 3. **Jiechao Gao**, Tiange Xie
DNA computing in cryptography
Advances in Computers (Elsevier), 2022
- Book '20** 2. Hongzhuo Qi, Yi Qin, **Jiechao Gao**
Cloud Computing and Big Data
Harbin Institute of Technology Press, 2020
- Book '19** 1. Jinglan Wu, Dongliang Lin, **Jiechao Gao**, Ye Xu
Introduction of Bigdata and Artificial Intelligence Applications
University of Electronic Science and Technology of China Press, 2019

Preprints

- arXiv '26** 8. Harbor Adapters and Harbor-Index: Infrastructure and a Curated Meta-Dataset for Large-Scale Agentic Evaluation
- arXiv '26** 7. PrivateHub: Contrastive Diffusion Model for Private Sensor-Intensive Environment Data Generation
- arXiv '26** 6. The Orchestration Gap: Why Process Automation Stalls in Operationally Complex Industries
- arXiv '26** 5. Clusters are All You Need: Pre-Training the Tsetlin Machine with Semantic Clusters from Language Models for Interpretability
- arXiv '25** 4. ChildGuard: A Specialized Dataset for Combatting Child-Targeted Hate Speech
- arXiv '25** 3. Can Argus Judge Them All? Comparing VLMs Across Domains
- Preprints.org '24** 2. Artificial Intelligence-Aided Digital Twin Design: A Systematic Review and Future Directions
- arXiv '23** 1. From Simulations to Reality: Enhancing Multi-Robot Exploration for Urban Search and Rescue

Under Review (main-track submissions)

Anchoring LLM-based Chest X-ray Report Generation via Diffusion Language Planning

Phase-wise MLLM Tuning for Multi-framework WebUI Code Generation

Toward Executable Multi-framework Front-end Code Generation with Self-Correction

Render Structure Uncertainty for HTML Repair in MLLM-based UI-to-Code Generation

When Properties Are Not Separated: Do LLMs Fail at Judging?

Clinically Grounded Curriculum Learning for Radiology Report Generation

Fine-Grained Temporal Data Augmentation for Human Activity Recognition

GRM: Graph Reward Modeling for Multimodal Retrieval-Augmented Generation

Matched-Corruption Decoding: Tracing Support in Visual Reasoning

Show Your Evidence: Evaluating Grounded Instructional Video with Video-LLMs

GRANT &
PROPOSAL
EXPERIENCE

Contributed to funded research and proposal preparation as a graduate researcher / postdoc (not PI).

NSF: 2217071

Jul. 2022 - Sep. 2027

Collaborative Research: **PPoSS: LARGE: Co-designing Hardware, Software, and Algorithms to Enable Extreme-Scale Machine Learning Systems**

PI/co-PI(s): Aidong Zhang, Matthew Dwyer, Kevin Skadron, Bradford Campbell, Ashish Venkat

USDOT

under submission

University Transportation Centers Program - Tier 1 Center
CIFE

STUDENT
MENTORSHIP

20+ students have worked with me on research projects, many of whom moved on to PhD programs. Venues in parentheses are papers they first-authored or co-authored during our collaboration.

- Muran Yu: Stanford PhD (EMNLP'26 Ind.)
- Yulin Xu: UCI CS MS → USC CS PhD (KDD'25, ICML'26, SIGIR'26)
- Yuangang Li: USC CS MS → UCI CS PhD (AAAI'26, Findings of ACL'26, NPJ AI'26, BIBM'24, ICDM'24 W)
- Tiange Xie: Columbia U MS → IIE@CAS PhD (SciSec'24, ICASSP'26 ×2, book chapter)
- Mingyue Tang: USC CS MS → UVA SE PhD → UIUC CS PhD (ICCPs'25, SenSys'22 Poster)
- Gautam Siddharth Kashyap: Jamia Hamdard → Macquarie University CS PhD (EACL'26, ICASSP'26 ×2, ACL'26, WWW'26, EMNLP'25)
- Berend Gort: Columbia U MLE → Universitat Politècnica de Catalunya CS PhD
- Yuanbo Li: Zhengzhou University CS PhD
- Kai Shu: USC CS MS (BIBM'24, ACM MM'24)
- Xinyuan Huang: U of Toronto CS MS → U of Toronto CS PhD (ICASSP'26, BigData'25, BIBM'25)
- Binrui Wu: Fudan University (KDD'25, ACM MM'25 Oral, NeurIPS'25, ICML'26)
- Siyuan Chen: University of Bristol (ICLR'26, NeurIPS'25)
- Haoran Ma: Harvard University (ICML'26)
- Linxiao Li: University of Sydney (ICML'26)
- Haochen Sui: University of Michigan (ACM MM'25 ×2)
- Qi Sun: University of Melbourne (SIGIR'26)
- Yidong Wu: Imperial College London (NeurIPS'25)
- Ebad Shabbir: DSEU-Okhla → MBZUAI (ACL'26 ×2, EACL'26, EMNLP'25 ×2, ICASSP'26)
- Rafiq Ali: DSEU-Okhla → MBZUAI (ACL'26, EACL'26, EMNLP'25 ×2, ICASSP'26)
- Harsh Joshi: Bharati Vidyapeeth's College of Engineering → UC San Diego MS (EACL'26, ICASSP'26)
- Daniel Koo: The Nueva School (high school) (ICWSM'26 W)

TALKS AND
LECTURES

Stanford University	<i>Private and Accurate IoT Applications</i>	May. 2025
Rutgers Efficient AI Seminar	<i>Federated Learning Enabled IoT Systems</i>	May. 2024
Commonwealth Cyber Initiative Symposium	<i>PFed-LDP: A Personalized Federated Local Differential Privacy Framework for IoT Sensing Data</i>	Apr. 2023
Beijing Institute of Technology	<i>Towards Accurate and Private Cloud-IoT Applications</i>	Feb. 2023
Jilin University	<i>Towards Accurate and Private Cloud-IoT Applications</i>	Feb. 2023
Beijing University of Technology	<i>Towards Accurate and Private Cloud-IoT Applications</i>	Feb. 2023
UVA ML Seminar	<i>Federated Learning with Privacy</i>	Aug. 2022
UVA Link Lab	<i>Towards Accurate and Private IoT Applications</i>	Feb. 2022
Frees Fund	<i>How Neural Networks and Deep Learning Work in the Financial Industry</i>	Aug. 2018

TEACHING
EXPERIENCE

Stanford University

Guest Lecture

Stanford University CEE 221

Stanford, CA

Winter, 2026

University of Virginia

Teaching Assistant

Computer Networks (Prof. Brad Campbell)

Charlottesville, VA

Fall 2020

Teaching Assistant (helping on course topics)

Spring 2020

Advanced Computer Networks (Prof. Yixin Sun)

Teaching Assistant

Fall 2019

Principles of Modeling for Cyber-Physical Systems (Prof. Madhur Behl)

Columbia University

New York City, NY

Teaching Assistant

Fall 2017

Reinforcement Learning (Prof. Chong Li)

SERVICES

Conference/Workshop/Competition Organizing Committee

- ASONAM Multidisciplinary Track Co-Chair 2026
- FinRL Contest ICAIF 2023, 2024, 2025
- UbiComp/ISWC Workshop on Design with Autistic Children 2024
- SecureComm Workshop on S/P-IoT 2022

Area Chair and/or (Senior) Program Committee/Reviewer for Conferences and Workshops

- IJCAI 2025 (SPC)
- AAAI-AIA 2025 (SPC)
- IJCNN 2025, 2026 (AC)
- EACL Industry Track 2026 (AC)
- IEEE IDS 2025, 2026 (Track Chair)
- NeurIPS 2022, 2023, 2024, 2025, 2026
- EMNLP Industry 2026
- SIGIR 2026
- BMVC 2026
- ICML 2025, 2026
- ACL ARR 2026
- KDD 2023, 2024, 2025, 2026
- AAAI 2024, 2025, 2026
- SDM 2024
- ML4H 2023, 2024
- UbiComp/IMWUT 2025
- ICLR 2025, 2026
- MLHC 2025
- ICASSP 2025, 2026 (AC)
- CVPR 2025, 2026
- ICCV 2025
- ICCPS 2025
- ACM MM 2025, 2026
- DSNE 2023–2026
- SecureComm 2022
- 2nd QTNML@NeurIPS 2022
- DCAA@AAAI 2023
- MILET@SIGKDD 2023
- AI4TS@IJCAI 2023
- Sensys Workshop on IoT Datasets 2024
- AI4TS@SDM 2024

Journal Reviewer

- Social Network Analysis and Mining (Associate Editor)
- IEEE Transactions on Systems, Man and Cybernetics: Systems
- Journal of Machine Learning Research (JMLR)
- IEEE Internet of Things Journal (IoT-J)
- IEEE Transactions on Intelligent Transportation Systems (TITS)
- IEEE Journal of Biomedical and Health Informatics (JBHI)
- IEEE Transactions on Cloud Computing (TCC)
- ACM Transactions on Sensor Networks (ToSN)
- Journal of Industrial Information Integration
- ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP)
- Financial Innovation

- ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)
- Expert Systems with Applications (ESWA)
- Cluster Computing
- IEEE Sensors Journal
- IEEE Access
- Soft Computing
- Journal of Ambient Intelligence and Humanized Computing
- Multimedia Tools and Applications

REFERENCES

Prof. Bradford Campbell

Associate Professor (Ph.D. Advisor)
 Department of Computer Science and Electrical Engineering
 University of Virginia
 Reference email: bradjc@virginia.edu

Prof. Michael Lepech

C. L. Peck, Class of 1906 Professor (Postdoc Advisor)
 Department of Civil and Environmental Engineering
 Stanford University
 Reference email: mlepech@stanford.edu

Prof. Jie Wang

Executive Director (Postdoc Advisor)
 Center for Sustainable Development and Global Competitiveness
 Department of Civil and Environmental Engineering
 Stanford University
 Reference email: jiewang@stanford.edu