Xiusi Chen

201 N Goodwin Ave, Urbana, IL 61801

☎ (+1) (310)-913-7838 ● ✉ xchen@cs.ucla.edu

RESEARCH INTERESTS

My ultimate research goal is to build automated language agents that can assist human in a variety of domains. To achieve this goal, I worked on:

- **Large Language Models**, especially low-resource LLM reasoning (*Gotta, MinPrompt, TPD*) and alignment (*IterAlign*);
- **Language and Other Modality Applications**, especially in retrieval and recommendation (*CP-LSH, BLaIR*);
- **Complex Dynamics Modeling and Decision Making**, especially the planning tasks in sports domain (*ReLiable, PlayBest*).

EDUCATION

University of Illinois Urbana-Champaign
Postdoctoral Research Fellow
Advisor: Prof. Heng Ji.

University of California, Los Angeles
Ph.D. in Computer Science
Thesis Committee: Prof. Wei Wang (Chair), Prof. Yizhou Sun, Prof. Kai-Wei Chang, Prof. Jeffrey Brantingham

Peking University
B.S & M.S. in Computer Science
Thesis Committee: Prof. Jun Gao (Chair), Prof. Bin Cui, Prof. Ming Zhang, and Prof. Shuai Ma

INDUSTRIAL EXPERIENCES

Amazon Search   6/2023 - 12/2023
Query Understanding team, Applied Scientist Intern

Amazon Search   6/2022 - 9/2022
PECOS team, Applied Scientist Intern

NEC Laboratories America   6/2019 - 9/2019
Data Science & System Security, Research Intern

Alibaba   7/2016 - 12/2016
DAMO Academy, Research Intern

SELECTED PUBLICATIONS

(*: Equal contribution)

Xiusi Chen, Jyun-Yu Jiang, Wei-Cheng Chang, Cho-Jui Hsieh, Hsiang-Fu Yu, Wei Wang, *MinPrompt: Graph-based Minimal Prompt Data Augmentation for Few-shot Question Answering.* In Proceedings of The 62nd Annual Meeting of the Association for Computational Linguistics (**ACL**), main conference, 2024.

Xiusi Chen, Hongzhi Wen, Sreyashi Nag, Chen Luo, Qingyu Yin, Ruirui Li, Zheng Li, Wei Wang, ITERALIGN: *Iterative Constitutional Alignment of Large Language Models.* In Proceedings of The 2024 Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL**), main conference, 2024.

Yu Zhang*, **Xiusi Chen***, Bowen Jin*, Sheng Wang, Shuiwang Ji, Wei Wang, Jiawei Han, *A Comprehensive Survey of Scientific Large Language Models and Their Applications in Scientific Discovery.* In Proceedings of The 2024 Conference on Empirical Methods in Natural Language Processing (**EMNLP**), main conference, 2024. Totaling 400+ stars as of August 2024.

Xiusi Chen, Wei-Yao Wang, Ziniu Hu, David Reynoso, Kun Jin, Mingyan Liu, P. Jeffrey Brantingham, Wei Wang, *Professional Basketball Player Behavior Synthesis via Planning with Diffusion.* In Proceedings of The 33rd ACM International Conference on Information and Knowledge Management (**CIKM**), 2024.

Xiusi Chen, Yu Zhang, Jinliang Deng, Jyun-Yu Jiang, Wei Wang, GOTTA: *Generative Few-shot Question Answering by Prompt-based Cloze Data Augmentation.* In Proceedings of the 2023 SIAM International Conference on Data Mining (**SDM**), 2023. Long paper, Best Poster Award (Honorable Mention)

Xiusi Chen, Jyun-Yu Jiang, Kun Jin, Yichao Zhou, Mingyan Liu, Jefferey Brantingham, Wei Wang, RELIABLE: *Offline Reinforcement Learning for Tactical Strategies in Professional Basketball Games.* In Proceedings of The 31st ACM International Conference on Information and Knowledge Management (**CIKM**), 2022.

Xiusi Chen, Jyun-Yu Jiang, Wei Wang, *Scalable Graph Representation Learning via Locality-Sensitive Hashing.* In Proceedings of The 31st ACM International Conference on Information and Knowledge Management (**CIKM**), 2022.

Yijun Tian*, Yikun Han*, **Xiusi Chen***, Wei Wang, Nitech V. Chawla, *TinyLLM: Learning a Small Student from Multiple Large Language Models.* submitted to **WSDM**, on ArXiv, 2024.

Yu Wang, Yifan Gao, **Xiusi Chen**, Haoming Jiang, Shiyang Li, Jingfeng Yang, Qingyu Yin, Zheng Li, Xian Li, Bing Yin, Jingbo Shang, Julian McAuley, *MemoryLLM: Toward Self-Updating Large Language Models.* In Proceedings of The Forty-first International Conference on Machine Learning (**ICML**), 2024.

Bowen Jin, Hansi Zeng, Guoyin Wang, **Xiusi Chen**, Tianxin Wei, Ruirui Li, Zhengyang Wang, Zheng Li, Yang Li, Hanqing Lu, Suhang Wang, Jiawei Han, Xianfeng Tang, *Language Models as Semantic Indexers.* In Proceedings of The Forty-first International Conference on Machine Learning (**ICML**), 2024.

Yupeng Hou, Jiacheng Li, Zhankui He, An Yan, **Xiusi Chen**, Julian McAuley, *Bridging Language and Items for Retrieval and Recommendation.* Also known as **Amazon Reviews'23**, on ArXiv, 2024. Totaling 300k+ downloads as of September 2024.

Yu Zhang, Bowen Jin, **Xiusi Chen**, Yanzhen Shen, Yunyi Zhang, Yu Meng, Jiawei Han, *Weakly Supervised Multi-Label Classification of Full-Text Scientific Papers.* In Proceedings of 29th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**), 2023.

Jinliang Deng, **Xiusi Chen**, Renhe Jiang, Xuan Song, Ivor W. Tsang. *ST-Norm: Spatial and Temporal Normalization for Multivariate Time Series Forecasting.* In Proceedings of 27th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**), 2021.

Chao Zhang, Fangbo Tao, **Xiusi Chen**, Jiaming Shen, Meng Jiang, Brian Sadler, Michelle Vanni and Jiawei Han, *TaxonGen: Constructing Topical Concept Taxonomy by Adaptive Term Embedding and Clustering.* In Proceedings of 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**), 2018. Oral.

Haorui Wang, Rongzhi Zhang, Yinghao Li, Lingkai Kong, Yuchen Zhuang, **Xiusi Chen**, Chao Zhang, *TPD: Enhancing Student Language Model Reasoning via Principle Discovery and Guidance.* In Proceedings of the 1st Conference on Language Modeling (**COLM**), 2024.

Yu Zhang, Yanzhen Shen, SeongKu Kang, **Xiusi Chen**, Bowen Jin, Jiawei Han, *Chain-of-Factors Paper-Reviewer Matching.* on ArXiv, 2023.

Yu Wang, Ruihan Wu, Zexue He, **Xiusi Chen**, Julian McAuley, *Large Scale Knowledge Washing.* on ArXiv, 2024.

Yu Wang, Chi Han, Tongtong Wu, Xiaoxin He, Wangchunshu Zhou, Nafis Sadeq, **Xiusi Chen**, Zexue He, Wei Wang, Gholamreza Haffari, Heng Ji, Julian McAuley, *Towards LifeSpan Cognitive Systems.* on ArXiv, 2024.

Jonathan Light, Min Cai, Weiqin Chen, Guanzhi Wang, **Xiusi Chen**, Wei Cheng, Yisong Yue, Ziniu Hu, *Strategist: Learning Strategic Skills by LLMs via Bi-Level Tree Search.* on ArXiv, 2024.

OTHER PUBLICATIONS

Jinliang Deng, **Xiusi Chen**, Renhe Jiang, Du Yin, Yi Yang, Xuan Song, Ivor W. Tsang, *Disentangling Structured Components: Towards Adaptive, Interpretable and Scalable Time Series Forecasting.* In IEEE Transactions on Knowledge and Data Engineering (**TDKE**), 2024.

Jessie W. Y. Ko, Shengquan Ni, Alexander Taylor, **Xiusi Chen**, Yicong Huang, Avinash Kumar, Sadeem Alsudais, Zuozhi Wang, Xiaozhen Liu, Wei Wang, Chen Li, Suellen Hopfer, *How the Experience of California Wildfires Shapes Twitter Climate Change Framings.* **Climatic Change**, 2024.

Alexander Taylor, Yicong Huang, Junheng Hao, Xinyuan Lin, **Xiusi Chen**, Wei Wang, Chen Li, *Data Science Tasks Using Scripts versus GUI-based Workflows: The Good, the Bad, and the Ugly.* In Proceedings of the 3rd International Workshop on Data Platform Design, Management, and Optimization. (**DataPlat@ICDE**), 2024

Shengquan Ni, Yicong Huang, Jessie W. Y. Ko, Alexander Taylor, **Xiusi Chen**, Avinash Kumar, Sadeem Alsudais, Zuozhi Wang, Xiaozhen Liu, Wei Wang, Suellen Hopfer, Chen Li, *Using Texera to Characterize Climate Change Discussions on Twitter During Wildfires.* (**KDD**), 2023. (poster paper)

Jinliang Deng, **Xiusi Chen**, Renhe Jiang, Xuan Song, Ivor W. Tsang, *A Multi-view Multi-task Learning Framework for Multivariate Time Series Forecasting.* In IEEE Transactions on Knowledge and Data Engineering (**TDKE**), 2022.

Yu Zhang*, Shweta Garg*, Yu Meng, **Xiusi Chen**, Jiawei Han, *MotifClass: Weakly Supervised Text Classification with Higher-order Metadata Information.* In Proceedings of the Fifteenth ACM International Conference on Web Search and Data Mining (**WSDM**), 2022.

Yichao Zhou, Jyun-Yu Jiang, **Xiusi Chen**, Wei Wang. *#StayHome or #Marathon? Social Media Enhanced Pandemic Surveillance on Spatial-temporal Dynamic Graphs.* In Proceedings of The 30th ACM International Conference on Information and Knowledge Management (**CIKM**), 2021.

Jyun-Yu Jiang, Yichao Zhou, **Xiusi Chen**, Yan-Ru Jhou, Liqi Zhao, Sabrina Liu, Po-Chun Yang, Jule Ahmar, Wei Wang. *COVID-19 Surveiller: Toward a Robust and Effective Pandemic Surveillance System based on Social Media Mining*. In Philosophical Transactions of the Royal Society A (**Philosophical Transactions A**), 2022.

Seungbae Kim, **Xiusi Chen**, Jyun-Yu Jiang, Jinyoung Han, Wei Wang. *Evaluating audience loyalty and authenticity in influencer marketing via multi-task multi-relational learning*. In The 15th International AAAI Conference on Web and Social Media (**ICWSM**), 2021.

Jinliang Deng, **Xiusi Chen**, Zipei Fan, Renhe Jiang, Xuan Song, Ivor W. Tsang. 2021. *The Pulse of Urban Transport: Exploring the Co-evolving Pattern for Spatio-temporal Forecasting*. In ACM Transactions on Knowledge Discovery in Data (**TKDD**), 2021.

Yu Zhang, **Xiusi Chen**, Yu Meng, Jiawei Han, *Hierarchical Metadata-Aware Document Categorization under Weak Supervision*. In Proceedings of the Fourteenth ACM International Conference on Web Search and Data Mining (**WSDM**), 2021.

Ruirui Li, Xian Wu, **Xiusi Chen**, Wei Wang, *Self-Attentive Few-Shot Learning for New User Recommendation in Location-based Social Networks*. In Proceedings of The Web Conference 2020 (**WWW**), 2020. Oral.

Fangbo Tao*, Chao Zhang*, **Xiusi Chen**, Meng Jiang, Tim Hanratty, Lance Kaplan and Jiawei Han, *Doc2Cube: Automated Document Allocation to Text Cube via Dimension-Aware Joint Embedding*. In Proceedings of the 17th IEEE International Conference on Data Mining (**ICDM**), 2018. Oral.

Chang Zhou, Jinze Bai, Junshuai Song, Xiaofei Liu, Zhengchao Zhao, **Xiusi Chen**, and Jun Gao, *ATRank: An Attention-Based User Behavior Modeling Framework for Recommendation*. In Proceedings of the 32nd AAAI Conference on Artificial Intelligence(**AAAI**), 2018. Oral.

US PATENT

Wenchao Yu, Bo Zong, Wei Cheng, Haifeng Chen, **Xiusi Chen**, *Knowledge Graph Alignment with Uncertainty Embedding*.

ACADEMIC SERVICE

Conference Program Committee
KDD'20-24; WSDM'22-24; WWW'24; SSL@WWW'21;
ICML'23-24; NeurIPS'22-24; ICLR'22-24; AAAI'21-24; IJCAI-ECAI'22-24;
ACL Rolling Review.

Conference Subreviewer
KDD'18, CIKM'18, WISE'18, IJCAI'19

Journal Reviewer
IEEE Transactions on Big Data (TBD), IEEE Transactions on Knowledge and Data Engineering (TKDE).

Student Volunteer
KDD'20, KDD'23.

HONORS AND AWARDS

Best Poster Award (Honorable Mention) *SIAM International Conference on Data Mining (SDM)*	Apr. 2023
SIAM Student Travel Award *SIAM*	Feb. 2023
SIGIR Student Travel Grant *ACM SIGIR*	Sept. 2022
SIGIR Student Travel Grant *ACM SIGIR*	Sept. 2021
Leo KoGuan Fellowship *top 2%, Peking University*	Sept. 2016
Merit Student *top 5%, Peking University*	Sept. 2016
Graduate Student Academic Fellowship *Peking University*	Sept. 2015, 2016, 2017

3rd Place of 17th Chinese University Basketball Association (CUBA) Championships, Beijing Division   Oct. 2014
On behalf of Peking University, Federation of University Sports of China

6th Place of the High School Students Swimming Contest of Hunan Province, 100M Breaststroke   Sept. 2010
The Education Department of Hunan Province

TEACHING EXPERIENCE

CS 245: Big Data Analysis   Fall 2020
Teaching Associate, University of California, Los Angeles

CS 143: Database Systems   Spring 2020
Teaching Assistant, University of California, Los Angeles

CS 31: Introduction to Computer Science   Fall 2019, Winter 2020
Teaching Assistant, University of California, Los Angeles

Introduction to Database Systems (Honor Track)   Spring 2016
Teaching Assistant, Peking University

Database Systems Principles and Technologies   Fall 2016
Teaching Assistant, Peking University

REFERENCES

Wei Wang, Leonard Kleinrock Chair Professor, ACM Fellow, IEEE Fellow
Department of Computer Science
University of California, Los Angeles
✉ weiwang@cs.ucla.edu

Heng Ji, Professor
Department of Computer Science
University of Illinois Urbana-Champaign
✉ hengji@illinois.edu

Yizhou Sun, Associate Professor
Department of Computer Science
University of California, Los Angeles
✉ yzsun@cs.ucla.edu

P. Jeffrey Brantingham, Professor
Department of Anthropology
University of California, Los Angeles
✉ branting@ucla.edu

ChengXiang Zhai, Donald Biggar Willett Professor, ACM Fellow
Department of Computer Science
University of Illinois Urbana-Champaign
✉ czhai@illinois.edu