

Jyun-Yu Jiang

Applied Scientist, Amazon Search
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Education

- University of California, Los Angeles**, California, United States *September 2016 - June 2021*
— Ph.D. in Computer Science
— Advisor: Prof. Wei Wang
— Thesis Topic: *Multi-scale Heterogeneous Human Behavior Modeling*
- National Taiwan University**, Taipei, Taiwan *August 2013 - July 2015*
— M.S. in Computer Science and Information Engineering (CSIE)
— Advisor: Prof. Pu-Jen Cheng
- National Taiwan University**, Taipei, Taiwan *August 2009 - June 2013*
— B.S. in Computer Science and Information Engineering (CSIE)

Research Interests

My research interests span the fields of machine learning, data mining, natural language processing, information retrieval, social science, and bioinformatics with both fundamental research and practical applications. More specifically, I am interested in **developing effective machine learning techniques and efficient algorithms to solve real-world problems** with the following directions:

Deep Human Behavior Modeling

- Harnessing multi-domain data to comprehensively understand human behaviors in different scales

Knowledge Discovery and Data Mining

- Designing solutions to mine knowledge from data and apply them to a wide range of problems

Machine Learning Applications

- Developing machine learning algorithms with theoretical foundations for real-world problems

Publications

Refereed Conference Publications

- [45] **Jyun-Yu Jiang**, Wei-Cheng Chang, Jiong Zhang, Cho-Jui Hsieh and Hsiang-Fu Yu. “Learning to Represent Human Motives for Goal-directed Web Browsing,” in *Proceedings of The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2022)*.
- [44] **Jyun-Yu Jiang**, Chia-Jung Lee, Longqi Yang, Bahareh Sarrafzadeh, Brent Hecht and Jaime Teevan. “Learning to Represent Human Motives for Goal-directed Web Browsing,” in *Proceedings of 15th ACM Conference on Recommender Systems (RecSys 2021)*.
- [43] **Jyun-Yu Jiang**, Chelsea J.-T. Ju, Junheng Hao, Muhao Chen and Wei Wang. “JEDI: Circular RNA Prediction based on Junction Encoders and Deep Interaction among Splice Sites,” in *Proceedings of The 29th annual international conference on Intelligent Systems for Molecular Biology and The 20th annual European Conference on Computational Biology (ISMB/ECCB 2021)*. Bioinformatics, OUP, 2021.
- [42] Seungbae Kim, Xiusi Chen, **Jyun-Yu Jiang**, Jinyoung Han and Wei Wang. “Evaluating audience loyalty and authenticity in influencer marketing via multi-task multi-relational learning,” in *Proceedings of The 15th International AAAI Conference on Web and Social Media (ICWSM 2021)*.
- [41] Seungbae Kim, **Jyun-Yu Jiang** and Wei Wang. “Discovering Undisclosed Paid Partnership on Social Media via Aspect-Attentive Sponsored Post Learning,” in *Proceedings of The 14th ACM International Conference on Web Search and Data Mining (WSDM 2021)*.

- [40] **Jyun-Yu Jiang**, Chenyan Xiong, Chia-Jung Lee and Wei Wang. “Long Document Ranking with Query-Directed Sparse Transformer,” in *Proceedings of 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP 2020)*.
- [39] **Jyun-Yu Jiang***, Patrick H. Chen*, Cho-Jui Hsieh and Wei Wang. “Clustering and Constructing User Coresets to Accelerate Large-scale Top-K Recommender Systems,” in *Proceedings of the 2020 World Wide Web Conference (WWW 2020)*. (*Equal contribution)
- [38] **Jyun-Yu Jiang**, Zeyu Li, Chelsea J.-T. Ju and Wei Wang. “MARU: Representation Learning for Heterogeneous Networks with Meta-context Aware Random Walks,” in *Proceedings of The 29th ACM International Conference on Information and Knowledge Management (CIKM 2020)*.
- [37] Ruirui Li, **Jyun-Yu Jiang**, Xian Wu, Chu-Cheng Hsieh and Andreas Stolcke. “Speaker Identification for Household Scenarios with Self-attention and Adversarial Training,” in *Proceedings of The 21st Interspeech Conference (INTERSPEECH 2020)*.
- [36] **Jyun-Yu Jiang**, Tao Wu, Georgios Roumpos, Heng-Tze Cheng, Xinyang Yi, Ed Chi, Harish Ganapathy, Nitin Jindal, Pei Cao and Wei Wang. “End-to-End Deep Attentive Personalized Item Retrieval for Online Content-sharing Platforms,” in *Proceedings of the 2020 World Wide Web Conference (WWW 2020)*.
- [35] Seungbae Kim, **Jyun-Yu Jiang**, Masaki Nakada, Jinyoung Han and Wei Wang. “Multimodal Post Attentive Profiling for Influencer Marketing,” in *Proceedings of the 2020 World Wide Web Conference (WWW 2020)*.
- [34] Cheng Zheng*, **Jyun-Yu Jiang***, Yichao Zhou, Sean Young and Wei Wang. “Social Media User Geolocation via Hybrid Attention,” in *Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2020)*. (*Equal contribution)
- [33] Yichao Zhou, **Jyun-Yu Jiang**, Jieyu Zhao, Kai-Wei Chang and Wei Wang. ““The Boating Store Had Its Best Sail Ever”: Pronunciation-attentive Contextualized Pun Recognition,” in *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020)*.
- [32] Ruirui Li, **Jyun-Yu Jiang**, Jiahao Liu, Chu-Cheng Hsieh and Wei Wang. “Automatic Speaker Recognition with Limited Data,” in *Proceedings of The 13th ACM International Conference on Web Search and Data Mining (WSDM 2020)*.
- [31] Ruirui Li, **Jyun-Yu Jiang**, Xian Wu, Hongda Mao, Chu-Cheng Hsieh and Wei Wang. “Bridging Mixture Density Networks with Meta-learning for Automatic Speaker Identification,” in *Proceedings of The 45th International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2020)*.
- [30] **Jyun-Yu Jiang***, Zehan Chao*, Andrea L. Bertozzi, Wei Wang, Sean Young and Deanna Needell. “Learning to Predict Human Stress Level with Incomplete Sensor Data from Wearable Devices,” in *Proceedings of The 28th ACM International Conference on Information and Knowledge Management (CIKM 2019)*. (*Equal contribution).
- [29] Yichao Zhou*, **Jyun-Yu Jiang***, Kai-Wei Chang and Wei Wang. “Learning to Discriminate Perturbations for Blocking Adversarial Attacks in Text Classification,” in *Proceedings of 2019 Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP 2019)*. (*Equal contribution).
- [28] **Jyun-Yu Jiang**, Xue Sun, Wei Wang and Sean Young. “Enhancing Air Quality Prediction with Social Media and Natural Language Processing,” in *Proceedings of The 57th Annual Meeting of the Association for Computational Linguistics (ACL 2019)*.
- [27] **Jyun-Yu Jiang**, Mingyang Zhang, Cheng Li, Michael Bendersky, Nadav Golbandi and Marc Najork. “Semantic Text Matching for Long-Form Documents,” in *Proceedings of the 2019 World Wide Web Conference (WWW 2019)*.
- [26] Zeyu Li, **Jyun-Yu Jiang**, Yizhou Sun and Wei Wang. “Personalized Question Routing via Heterogeneous Network Embedding,” in *Proceedings of The 33rd AAAI Conference on Artificial Intelligence (AAAI 2019)*.
- [25] Ruirui Li, **Jyun-Yu Jiang**, Chelsea J.-T. Ju and Wei Wang. “CORALS: Who are My Potential New Customers? Tapping into the Wisdom of Customers’ Decisions,” in *Proceedings of The 12th ACM International Conference on Web Search and Data Mining (WSDM 2019)*.
- [24] **Jyun-Yu Jiang** and Wei Wang. “RIN: Reformulation Inference Network for Context-Aware Query Suggestion,” in *Proceedings of The 27th ACM International Conference on Information and Knowledge Management (CIKM 2018)*.

- [23] **Jyun-Yu Jiang**, Cheng-Te Li, Yian Chen and Wei Wang. “Identifying Users behind Shared Accounts in Online Streaming Services,” in *Proceedings of The 41st International ACM SIGIR Conference on Research and Development in Information Retrieval* (SIGIR 2018).
- [22] **Jyun-Yu Jiang**, Francine Chen, Yan-Ying Chen and Wei Wang. “Learning to Disentangle Interleaved Conversational Threads with a Siamese Hierarchical Network and Similarity Ranking,” in *Proceedings of The 16th Annual Conference of the North American Chapter of the Association for Computational Linguistics* (NAACL 2018).
- [21] Guangyu Zhou, **Jyun-Yu Jiang**, Chelsea J.-T. Ju and Wei Wang. “Inferring Microbial Communities for City Scale Metagenomics Using Neural Networks,” in *Proceedings of 2018 IEEE International Conference on Bioinformatics and Biomedicine* (BIBM 2018).
- [20] **Jyun-Yu Jiang**, Pu-Jen Cheng and Wei Wang. “Open Source Repository Recommendation in Social Coding,” in *Proceedings of The 40th International ACM SIGIR Conference on Research and Development in Information Retrieval* (SIGIR 2017).
- [19] Chelsea J.-T. Ju, Ruirui Li, Zhengliang Wu, **Jyun-Yu Jiang**, Zhao Yang and Wei Wang. “Fleximer: Accurate Quantification of RNA-Seq via Variable-Length k -mers,” in *Proceedings of The 8th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics* (ACMBCB 2017).
- [18] **Jyun-Yu Jiang** and Cheng-Te Li. “Forecasting Geo-sensor Data with Participatory Sensing Based on Dropout Neural Network,” in *Proceedings of The 25th ACM International Conference on Information and Knowledge Management* (CIKM 2016).
- [17] **Jyun-Yu Jiang** and Pu-Jen Cheng. “Classifying User Search Intents for Query Auto-Completion,” in *Proceedings of The 2nd ACM SIGIR International Conference on the Theory of Information Retrieval* (ICTIR 2016).
- [16] **Jyun-Yu Jiang** and Cheng-Te Li. “Analyzing Social Event Participants for a Single Organizer,” in *Proceedings of AAAI International Conference on Web and Social Media* (ICWSM 2016).
- [15] **Jyun-Yu Jiang**, Jing Liu, Chin-Yew Lin and Pu-Jen Cheng. “Improving Ranking Consistency for Web Search by Leveraging a Knowledge Base and Search Logs,” in *Proceedings of The 24th ACM International Conference on Information and Knowledge Management* (CIKM 2015).
- [14] **Jyun-Yu Jiang**, Chin-Yew Lin and Pu-Jen Cheng. “Entity-driven Type Hierarchy Construction for Freebase,” in *Proceedings of 24th International World Wide Web Conference* (WWW 2015).
- [13] **Jyun-Yu Jiang**, Yen-Yu Ke, Pao-Yu Chien and Pu-Jen Cheng. “Learning User Reformulation Behavior for Query Auto-Completion,” in *Proceedings of the 37th International ACM SIGIR Conference on Research and Development in Information Retrieval* (SIGIR 2014).
- [12] **Jyun-Yu Jiang**, Chun-Liang Li, Chun-Pai Yang and Chung-Tsai Su. “Scanning-free Personalized Malware Warning System by Learning Implicit Feedback from Detection Logs,” in *Proceedings of the 21st ACM Conference on Computer and Communications Security* (CCS 2014).
- [11] **Jyun-Yu Jiang**, Yi-Shiang Tzeng, Pei-Ying Huang and Pu-Jen Cheng. “Analyzing the Spatiotemporal Effects on Detection of Rain Event Duration,” in *Proceedings of the 8th Asia Information Retrieval Societies Conference* (AIRS 2012).
- [10] Yi-Shiang Tzeng, **Jyun-Yu Jiang** and Pu-Jen Cheng. “Event Duration Detection on Microblogging,” in *Proceedings of the 2012 IEEE/WIC/ACM International Joint Conferences on Web Intelligence and Intelligent Agent Technology* (WI 2012).

Refereed Journal Publications

- [9] Guangyu Zhou*, Muhao Chen*, Chelsea J.-T. Ju*, Zheng Wang, **Jyun-Yu Jiang** and Wei Wang. “Mutation effect estimation on protein-protein interactions using deep contextualized representation learning,” in *NAR Genomics and Bioinformatics* (NARGAB), 2020. (*Equal contribution)
- [8] Guangyu Zhou, **Jyun-Yu Jiang**, Chelsea J.-T. Ju and Wei Wang. “Prediction of microbial communities for urban metagenomics using neural network approach,” in *Human Genomics*, 2019. A shorter version [21] appeared in BIBM 2018.
- [7] **Jyun-Yu Jiang** and Cheng-Te Li. “Who Should I Invite: Predicting Event Participants for a Host User,” in *Knowledge and Information Systems* (KAIS), 2018.

- [6] Jian-De Jiang, **Jyun-Yu Jiang** and Pu-Jen Cheng. “Co-cluster Hypothesis and Ranking Consistency for Relevance Ranking in Web Search,” in *Journal of the Association for Information Science and Technology* (JASIST), 2018.

Workshop Publications and Preprints

- [5] **Jyun-Yu Jiang**, Chelsea J.-T. Ju, Junheng Hao, Muhao Chen and Wei Wang. “JEDI: Circular RNA Prediction based on Junction Encoders and Deep Interaction among Splice Sites.” Technical Report, 2020.
- [4] Ruirui Li, **Jyun-Yu Jiang**, Chelsea J.-T. Ju, Cheryl Flynn, Wen-Ling Hsu, Jia Wang, Wei Wang and Tan Xu. “Enhancing Response Generation Using Chat FlowIdentification”, presented in *Conversational AI and Its Applications Workshop at KDD 2018* (KDD CAI 2018).
- [3] Chelsea Jui-Ting Ju*, **Jyun-Yu Jiang***, Ruirui Li, Zeyu Li and Wei Wang. “TahcoRoll: An Efficient Approach for Signature Profiling in Genomic Data through Variable-Length k-mers.” Technical Report, 2017. (*Equal contribution)
- [2] K.-W. Wu, C.-S. Ferng, C.-H. Ho, A.-C. Liang, C.-H. Huang, W.-Y. Shen, **J.-Y. Jiang**, M.-H. Yang, T.-W. Lin, C.-P. Lee, P.-H. Kung, C.-E. Wang, T.-W. Ku, C.-Y. Ho, Y.-S. Tai, I.-K. Chen, W.-L. Huang, C.-P. Chou, T.-J. Lin, H.-J. Yang, Y.-K. Wang, C.-T. Li, S.-D. Lin and H.-T. Lin.. “**A Two-Stage Ensemble of Diverse Models for Advertisement Ranking in KDD Cup 2012**”, presented in *KDDCup 2012 Workshop* (KDDCUP 2012). (**First Prize**).

Patents

- [1] **Jyun-Yu Jiang**, Francine Chen, Yin-Ying Chen and Scott Carter. “System and method for detangling of interleaved conversations in communication platforms.” US Patent App. 15/857,404, 2019.

Research Experience

Applied Scientist , <i>Amazon Search, United States</i>	<i>August 2021 - Present</i>
– Search and Personalization at Amazon	
Research Intern , <i>Microsoft Research, United States</i>	<i>June 2020 - September 2020</i>
– Mentors: Dr. Chia-Jung Lee, Dr. Longqi Yang, Dr. Brent Hecht, and Dr. Jaime Teevan.	
– Topic: goal-directed web browsing (with a submitted paper under review)	
Research Intern , <i>Google Brain, United States</i>	<i>June 2019 - September 2019</i>
– Mentors: Dr. Tao Wu and Dr. Georgios Roumpos	
– Topic: personalized item retrieval for YouTube search [36]	
Research Intern , <i>Google Research, United States</i>	<i>June 2018 - September 2018</i>
– Mentors: Dr. Mingyang Zhang, Dr. Cheng Li, and Dr. Michael Bendersky	
– Topic: content matching for long documents with deep learning [27]	
Research Intern , <i>FX Palo Alto Laboratory (FXPAL), United States</i>	<i>June 2017 - September 2017</i>
– Mentors: Dr. Francine Chen and Dr. Yan-Ying Chen	
– Topic: conversation disentanglement with deep learning [1, 22]	
Research Assistant , <i>Academia Sinica, Taiwan</i>	<i>September 2015 - August 2016</i>
– Mentor: Dr. Cheng-Te Li	
– Topics: urban computing [18], recommender systems [7, 16]	
Research Intern , <i>Microsoft Research</i>	<i>July 2013 - January 2014</i>
– Mentor: Dr. Chin-Yew Lin	
– Topics: relevance ranking in Web search [15], knowledge base mining [14]	
Research Assistant , <i>IRLab, CSIE, NTU, Taiwan</i>	<i>July 2011 - August 2016</i>
– Advisor: Prof. Pu-Jen Cheng	
– Topics: user behavior modeling in IR [6, 13, 17], event detection [10, 11], recommender systems [20]	
Data Scientist , <i>MixerBox, Taiwan</i>	<i>March 2015 - August 2016</i>
– Developed recommender systems for a universal music player to improve 10% of day-1 retention	

- Designed detectors to automatically discover more than 90% illegal users in an anonymous chat app

Selected Awards and Honors

UCLA Dissertation Fellowship	<i>2020 - 2021</i>
AWS Nominated Paper Award, SocialML 2019	<i>2019</i>
Winner, Yelp Dataset Challenge	<i>2017</i>
TAAI Master Thesis Award	<i>2015</i>
- Only 3 places for master theses related to artificial intelligence in Taiwan	
ACLCLP Master Thesis Award	<i>2015</i>
- Only 3 places for master theses related to natural language processing in Taiwan	
Distinguished and Excellent Teaching Assistant Award	<i>2015</i>
Garmin Scholarship	<i>2014</i>
- Only 17 places for graduate students in Taiwan	
College Student Research Creativity Award	<i>2013</i>
- Awarded by NSC, out of more than 2,000 college students supported to participate in research projects	
First Prize, KDD Cup 2012 with NTU Team	<i>2012</i>
NTU Outstanding Scholarship Award	<i>2012</i>
- Only 3 places for NTU students	
Finalist, National Health-Data Value Added Models Contest	<i>2012</i>

Programming Contests

6th place, 2011 ACM-ICPC Asia Hsinchu Regional Contest	<i>2011</i>
3rd place, 2010 ACM-ICPC Asia Kaohsiung Regional Contest	<i>2010</i>
5th place, 2009 ACM-ICPC Asia Jakarta Regional Contest	<i>2009</i>
9th place, 2009 ACM-ICPC Asia Hsinchu Regional Contest	<i>2009</i>

Teaching Experience

Teaching Assistant , University of California, Los Angeles	<i>Spring 2020</i>
- <i>Introduction to Algorithms</i> instructed by Prof. Cho-Jui Hsieh	
Teaching Assistant & Lecturer , University of California, Los Angeles	<i>Winter 2018, Spring 2019, Fall 2019</i>
- <i>Introduction to Data Mining</i> instructed by Prof. Wei Wang	
Teaching Assistant , University of California, Los Angeles	<i>Fall 2017</i>
- <i>Introduction to Data Mining</i> instructed by Prof. Yizhou Sun	
Teaching Assistant , National Taiwan University	<i>Fall 2014</i>
- <i>Algorithm Design and Analysis</i> instructed by Prof. Hsin-Mu Tsai	
Lecturer , National Taiwan University	<i>Spring 2014</i>
- <i>Application of Big Data System</i> co-instructed by Prof. Shih-Wei Liao	
Teaching Assistant , National Taiwan University	<i>Spring 2013</i>
- <i>Data Structure and Algorithm</i> instructed by Prof. Hsin-Mu Tsai	
Coach and Teaching Assistant , National Taiwan University	<i>Fall 2011, Fall 2012</i>
- <i>Course for ACM-ICPC Programming Contest</i> instructed by Prof. Pu-Jen Cheng	
- Trained and led NTU teams to participate international ACM-ICPC programming contests	
Teaching Assistant , National Taiwan University	<i>Fall 2009</i>
- <i>Introduction to Computer Programming</i> instructed by Prof. Pangfeng Liu	
Instructor , National Taiwan University	<i>July 2011, July 2012</i>

- *Computer Science Summer Camp* for high school students
- Taught courses of Python and algorithms for high school students
- Attracted numerous high school students to study computer science

Instructor, Jianguo High School

July 2008 - July 2009

- Organized the courses for international Olympiad in informatics (IOI)
- Lectured on topics of data structures, graph theory, dynamic programming and greedy algorithms
- Finally several students became the representatives of Taiwan for competing IOI

Professional Activities

PC Member

- 2022: ICML, KDD, ACL, NAACL, ICDE, AAAI, WSDM, RecSys
- 2021: ICML, KDD, ACL/IJCNLP, NAACL, EMNLP, ICLR, ICDE, AAAI
- 2020: ICML, AAAI, ACL, EMNLP, ICLR
- 2019: AAAI, EMNLP/IJCNLP, ACL, NAACL, AIRS
- 2018: ACL

Journal Paper Reviewer

- Journal of the Association for Information Science and Technology (JASIST)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)
- Information Sciences (Inf. Sci.)
- Information Processing and Management (IPM)
- Journal of Information Science and Engineering (JISE)
- Physica A

External Reviewer

- WWW'21, WSDM'20, CIKM'19, KDD'18, ISMB'18, KDD'17, ICDM'17.