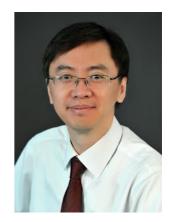# Wei GAO

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Education

PhD, Chinese University of Hong Kong, 2010

MPhil, Chinese University of Hong Kong, 2004

Bachelor of Engineering, Beijing Info Science & Technology University, China, 1996

Academic Appointments

Assistant Professor of Computer Science, School of Computing and Information Systems, SMU, Apr 2021 - Present

Assistant Professor of Information Systems, School of Computing and Information Systems, SMU, Dec 2019 - Mar 2021

RESEARCH

Research and Project Areas

Natural Language Processing and Text Mining
Social Network Analysis and Mining
Information Retrieval
Artificial Intelligence

Publications

Journal Articles [Refereed]

Predicting viral rumors and vulnerable users with graph-based neural multi-task learning for infodemic surveillance, by ZHANG, Xuan; GAO, Wei. (2024). *Information Processing and Management, 61* (1), 1-18. https://doi.org/10.1016/j.ipm.2023.103520 (Published)

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Editorials

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Towards LLM-based fact verification on news claims with a hierarchical step-by-step prompting method, by ZHANG, Xuan; GAO, Wei. (2023.0). *Proceedings of the 13th International Joint Conference on Natural Language Processing and the 3rd Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics, Bali, Indonesia, November 1-4,* (pp. 996-1011) New York, USA: Association for Computational Linguistics. (Published)

Prompt to be consistent is better than self-consistent? Few-shot and zero-shot fact verification with pre-trained language models, by ZENG, Fengzhu; GAO, Wei. (2023.0). *Findings of the Association for Computational Linguistics: ACL 2023,* (pp. 4555-4569) USA: Association for Computational Linguistics.
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Recommendation vs sentiment analysis: A text-driven latent factor model for rating prediction with cold-start awareness, by SONG, Kaisong; GAO, Wei; FENG, Shi Feng; WANG, Daling; WONG, Kam-Fai; ZHANG, Chengqi. (2017.0). *Proceedings of 26th International Joint Conference on Artificial Intelligence (IJCAI 2017),* (pp. 2744-2750) Melbourne, Australia: AAAI Press. https://doi.org/10.24963/ijcai.2017/382 (Published)

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From retweet to believability: Utilizing trust to identify rumor spreaders on Twitter, by RATH, Bhavtosh; GAO, Wei; MA, Jing; SRIVASTAVA, Jaideep. (2017.0). *Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2017),* (pp. 179-186) Sydney, Australia: ACM Press. https://doi.org/10.1145/3110025.3110121 (Published)

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HE, Yulan; GAO, Wei; LI, Binyang; ZHOU, Lanjun; WONG, Kam-Fai. (2013.0). *Proceedings of the 24th ACM Conference on Hypertext and Social Media (Hypertext 2013),* (pp. 174-178) Paris, France: ACM Press. https://doi.org/10.1145/2481492.2481512 (Published)

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Information-theoretic multi-view domain adaptation, by YANG, Pei; GAO, Wei; TAN, Qi; WONG, Kam-Fai. (2012.0). *Proceedings of the 50th Annual Meeting of the Association for Computational Linguistics (ACL 2012),* (pp. 270-274) Jeju Island, Korea: Association for Computational Linguistics. https://www.aclweb.org/anthology/P12-2053/ (Published)

Tracking sentiment and topic dynamics from social media, by HE, Yulan; LIN, Chenghua; GAO, Wei; WONG, Kam-Fai. (2012.0). *Proceedings of the 6th International AAAI Conference on Weblogs and Social Media (ICWSM 2012),* (pp. 483-486) Dublin, Ireland: AAAI Press. https://aaai.org/ICWSM/ICWSM12/paper/view/4496 (Published)

An effective approach for topicspecific opinion summarization, by LI, Binyang; ZHOU, Lanjun; GAO, Wei; WONG, Kam-Fai; WEI, Zhongyu. (2011.0). *Proceedings of the Seventh Asian Information Retrieval Societies Conference,* (pp. 398-409) Dubai, UAE: LNCS, Springer. https://doi.org/10.1007/978-3-642-25631-8_36 (Published)

Exploring tweets normalization and query time sensitivity for Twitter search, by WEI, Zhongyu; GAO, Wei; ZHOU Lanjun; LI, Binyang; WONG, Kam-Fai. (2011.0). *Proceedings of the 20th Text REtrieval Conference (TREC 2011),* Geithersburg, MD, USA.: NIST Special Publication: SP 500-296. (Published)

Generating aspect-oriented multi-document summarization with event-aspect model, by LI, Peng; WANG, Yinglin; GAO, Wei; JIANG, Jing. (2011.0). *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing (EMNLP 2011),* (pp. 1137-1146) Edinburgh, Scotland, UK: Association for Computational Linguistics. https://aclweb.org/anthology/D11-1105 (Published)

Unsupervised discovery of discourse relations for eliminating intra-sentence polarity ambiguities, by ZHOU, Lanjun; LI, Binyang; GAO, Wei; WEI, Zhongyu; WONG, Kam-Fai. (2011.0). *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing (EMNLP 2011),* (pp. 162-171) Edinburgh, Scotland, UK: Association for Computational Linguistics. https://aclweb.org/anthology/D11-1015 (Published)

Relevant knowledge helps in choosing right teacher: Active query selection for ranking adaptation, by CAI, Peng; GAO, Wei; WONG, Kam-Fai; ZHOU, Aoying. (2011.0). *Proceedings of the 34th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2011),* (pp. 115-124) Beijing, China: ACM Press. https://doi.org/10.1145/2009916.2009935 (Published)

Query weighting for ranking model adaptation, by CAI, Peng; GAO, Wei; ZHOU, Aoying; WONG, Kam-Fai. (2011.0). *Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics (ACL 2011),* (pp. 112-122) Portland, OR, USA: Association for Computational Linguistics. https://aclweb.org/anthology/P11-1012 (Published)

Weight-based boosting model for cross-domain relevance ranking adaptation, by CAI, Peng; GAO, Wei; WONG, Kam-Fai; ZHOU, Aoying. (2011.0). *Proceedings of the 33rd European Conference on Information*

Retrieval (ECIR 2011), (pp. 562-567) Dublin, Ireland: LNCS, Springer. https://doi.org/10.1007/978-3-642-20161-5_56 (Published)

Learning to rank only using training data from related domain, by GAO, Wei; CAI, Peng; WONG, Kam-Fai; ZHOU, Aoying. (2010.0). *Proceedings of the 33rd Annual International ACM SIGIR7 Conference on Research and Development in Information Retrieval (SIGIR 2010),* (pp. 162-169) Geneva, Switzerland: ACM Press. https://doi.org/10.1145/1835449.1835478 (Published)

Exploiting bilingual information to improve web search, by GAO, Wei; BITZER,John; ZHOU, Ming; WONG, Kam-Fai. (2009.0). *Proceedings of the 47th Annual Meeting of the Association for Computational Linguistics (ACL 2019),* (pp. 1075-1083) Singapore: Association for Computational Linguistics. https://www.aclweb.org/anthology/P09-1121/ (Published)

Joint ranking for multilingual web search, by GAO, Wei; NIU, Cheng; ZHOU, Ming; WONG, Kam-Fai. (2009.0). *Proceedings of the 31st European Conference on Information Retrieval (ECIR 2009),* (pp. 114-125) Toulouse, France: LNCS, Springer. https://doi.org/10.1007/978-3-642-00958-7_13 (Published)

Using English information in Non-English web search, by GAO, Wei; BLITZER, John; ZHOU, Ming. (2008.0). *Proceedings of the ACM International Workshop on Improving Non-English Web Searching (iNEWS 2008),* (pp. 17-24) Nappa Valley, California, USA: ACM Press. https://doi.org/10.1145/1460027.1460031 (Published)

Cross-lingual query suggestion using query logs of different languages, by GAO, Wei; NIU, Cheng; NIE, Jian-Yun; ZHOU, Ming; HU, Jian; WONG, Kam-Fai; HON, Hsiao-Wuen. (2007.0). *Proceedings of the 30th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2007),* (pp. 463-470) Amsterdam, The Netherlands: ACM Press. https://doi.org/10.1145/1277741.1277821 (Published)

Clique percolation for finding naturally cohesive and overlapping document clusters, by GAO, Wei; WONG, Kam-Fai; XIA, Yunqing; XU, Ruifeng. (2006.0). *Proceedings of the 21st International Conference on Computer Processing of Oriental Languages (ICCPOL 2006),* (pp. 97-108) Singapore: LNAI, Springer. https://doi.org/10.1007/11940098_10 (Published)

Natural document clustering by clique percolation in random graphs, by GAO, Wei; WONG, Kam-Fai. (2006.0). *Proceedings of the 3rd Asia Information Retrieval Symposium (AIRS 2006),* (pp. 119-131) Singapore: Springer. https://doi.org/10.1007/11880592_10 (Published)

NIL is not nothing: Recognition of Chinese network informal language expressions, by XIA, Yunqing; WONG; Kam-Fai; GAO, Wei. (2005.0). *Proceedings of the 4th SIGHAN workshop on Chinese Language Processing,* Jeju Island, Korea: http://aclweb.org/anthology/I05-3013 (Published)

NIL Is not nothing: Recognition of Chinese network informal language expressions, by XIA, Yunqing; WONG, Kam-Fai; GAO, Wei. (2005.0). *Proceedings of the 4th SIGHAN workshop on Chinese Language Processing (SIGHAN 2005),* (pp. 95-102) Jeju Island, Korea: Association for Computational Linguistics. https://www.aclweb.org/anthology/I05-3013.pdf (Published)

Improving transliteration with precise alignment of phoneme chunks and using contextual features, by GAO, Wei; WONG, Kam-Fai; LAM, Wai. (2004.0). *Proceedings of the First Asia Information Retrieval Symposium (AIRS 2004),* (pp. 106-117) Beijing, China: Springer. https://doi.org/10.1007/978-3-540-31871-2_10 (Published)

Phoneme-based transliteration of foreign names for OOV problem, by GAO, Wei; WONG, Kam-Fai; LAM, Wai. (2004.0). *Proceedings of the First International Joint Conference on Natural Language Processing (IJCNLP 2004),* (pp. 110-119) Sanya, Hainan Island, China: Springer. https://doi.org/10.1007/978-3-540-30211-7_12 (Published)

Design issues in a Chinese financial information extraction system, by LI, Qingzhong; GAO, Wei; LI, Wenjie; WONG, Kam-Fai; YUAN, Chunfa; WANG, Yun. (2003.0). *Advances in computation of oriental languages: 20th International Conference on Computer Processing of Oriental Languages: Shenyang, China, 2003 August 4-6,* (pp. 417-423) Beijing: Tsinghua University Press. https://worldcat.org/isbn/9787302069423 (Published)

Papers Submitted for Review

Journal Articles [Refereed]

Improving conversational recommender system via contextual and time-aware modeling with less domain-specific knowledge [submitted], by WANG, Lingzhi; JOTY, Shafiq; GAO, Wei; ZENG, Xingshan; WONG, Kam-Fai. (2022). *IEEE Transactions on Knowledge and Data Engineering,* (Submitted)

Working Papers

Leveraging Fine-Grained Feedback in Reinforcement Retrieval for Fact Checking News Claims with Black-Box LLM, by Zhang, Xuan; Gao, Wei. (2023). LREC-COLING. (Submitted)

Towards Explainable Harmful Meme Detection through Multimodal Debate between Large Language Models, by Lin, Hongzhan; Luo, Ziyang; Gao, Wei; Ma, Jing; Wang, Bo; Yang, Ruichao Yang. (2023). WWW. (Submitted)

Jointly Detecting Stance and Verifying Rumor with Large Language Model via Reinforcement Learning, by Yang, Ruichao; Ma, Jing; Gao, Wei; Ling, Hongzhan; Wang, Bo. (2023). WWW. (Submitted)

Research Grants

Singapore Management University

Semi-supervised Fact-checking via Multi-View Evidence Embedding, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Wei GAO , Co-PI (Project Level): LIM Ee Peng, 2019, S$100,000

Other Institutions

Characterizing User Stances for Predicting Social Polarization in Online Platforms, A*STAR-SMU Joint Lab in Social and Human-Centered Computing Grant, Singapore Management University (SMU) PI (Project Level): Wei GAO, Prasanta Bhattacharya, Co-PI (Project Level): Jisun AN, Joseph Simons, 2022, SGD101,804

Computational Inference of Attitude Strength, A*STAR-SMU Joint Lab in Social and Human-Centered Computing Grant, Singapore Management University (SMU) PI (Project Level): Jisun AN, Joseph Simons, Co-PI (Project Level): Wei GAO, Prasanta Bhattacharya, 2022, SGD62,205

Transition from Living Analytics Research Centre to Social Urban Observatory, Strategic Capabilities Research Centres Funding Initiative, NRF PI (Project Level): LIM Ee Peng, Co-PI (Project Level): ZHENG Baihua, Archan MISRA, Jing JIANG, Wei GAO, SUN Qianru, HARA, Kotaro, Palakorn ACHANANUPARP, 2021, SGD2,687,280

Transition from Living Analytics Research Centre to Social Urban Observatory, NRF, National Research Foundation - Strategic Capabilities Research Centres Funding Initiative , PI (Programme Level): LIM Ee Peng, PI (Project Level): LIM Ee Peng, Archan MISRA, Jing JIANG, ZHENG Baihua, Co-PI (Project Level): HARA, Kotaro, SUN Qianru, Palakorn ACHANANUPARP, Wei GAO, 2021, SGD2,687,280

TEACHING

Teaching Areas

Natural language processing
Social media analysis and mining
Applied machine learning

Courses Taught

<u>Singapore Management University</u>

Undergraduate Programmes :

      IS Project Experience (Applications)

      IS/SMT Project Experience (Applications)

      Natural Language Communication

      Social Analytics and Applications

Postgraduate Professional Programmes :

      Capstone Project - Data Science and Engineering

      Social Analytics and Applications

Postgraduate Research Programmes :

      Empirical Research Project 1

      Empirical Research Project 2

      Empirical Research Project 3

      Empirical Research Project 4

THESES AND DISSERTATIONS

Theses and Dissertations Assessed

<u>Singapore Management University</u>

Committee Member, "Learning to Interpret Knowledge from Software Questions and Answer Sites", Dissertation by XU Bowen, PhD in Computer Science, Singapore Management University, 2017

OTHER ACADEMIC AND PROFESSIONAL ACTIVITIES

Presentation and Talks

<u>Invited Seminars, Talks and Lectures</u>

Rumor Detection with Generative Adversarial Learning, 26 Jan 2022. KDD for a Safer Online Social Space, Online, Singapore

UNIVERSITY SERVICE

Singapore Management University

Committee Chair, Qualifying Examination Committee, Oct 2021 - Present

Committee Member, Dissertation Committee, Apr 2020 - Present

Committee Member, Qualifying Examination Committee, Apr 2020 - Present

Committee Member, Dean's Evaluation Committee, Jan 2020 - Present

EXTERNAL SERVICE – PROFESSIONAL

Area Chair, The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024) , 2023 - Present

PC Chair, The 2023 Singapore Symposium on Natural Language Processing (SSNLP), 2023

Senior Area Chair, The 13th International Joint Conference on Natural Language Processing and the 3rd Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics, 2023 - Present

Area Chair, The SIGNLL Conference on Computational Natural Language Learning (CoNLL), 2023

Senior Area Chair, Annual Meeting of Association for Computational Linguistics (ACL), 2022

Senior Program Committee Member, The International AAAI Conference on Web and Social Media (ICWSM), 2022, 2022 - Present

Area Chair, The 17th Annual Meeting of the European chapter of the Association for Computational Linguistics, 2023, 2022 - 2023

Reviewer Journal Article, PLOS ONE, 2022 - Present

Guest Editor, IEEE Transactions on Computational Social Systems (TCSS), 2021

Program Committee Member, The International Conference on Database Systems for Advanced Applications (DASFAA), 2021

Reviewer Journal Article, IEEE Transactions on Audio, Speech and Language Processing, 2021 - Present

Program Committee Member, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2021

Committee Member, Thesis Advisory Committee for PhD Research Students, Nanyang Technological University, 2020 - Present

Reviewer Journal Article, IEEE Security & Privacy, 2020 - Present

Editor Associate Editor, ACM Transactions on Asian and Low-Resource Language Information Processing, 2020 - Present

Workshop Co-chair, Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics (AACL-IJCNLP), 2020

Program Committee Member, The Web Conference (WWW), 2020, 2021, 2022, 2020 - Present

Committee Member, PhD Thesis Defense Committee, The Chinese University of Hong Kong, 2020

Program Committee Member, European Conference on Information Retrieval (ECIR), 2019, 2020

Standing Review Committee Member, Transactions of the Association for Computational Linguistics, 2020 - Present

Area Co-Chair, The CCF International Conference on Natural Language Processing and Chinese Computing (NLPCC), 2015, 2018, 2019, 2020

Program Committee Member, AAAI Conference on Artificial Intelligence (AAAI), 2020, 2021, 2022, 2020 - Present

Standing Review Committee Member, Computational Linguistics, 2020 - Present

Program Committee Member, The International Conference on Computational Linguistics (COLING), 2020

Reviewer Journal Article, Information Processing and Management, 2019 - Present

Senior Program Committee Member, AAAI Conference on Artificial Intelligence (AAAI), 2019

Area Chair, Annual Meeting of Association for Computational Linguistics (ACL), 2019, 2020, 2023, 2019 - Present

Area Chair, Conference on Empirical Methods in Natural Language Processing (EMNLP), 2019, 2021, 2022, 2019 - Present

Program Committee Member, Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2019, 2021, 2019 - Present

Program Committee Member, IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 2015, 2016, 2017, 2018, 2019

Reviewer Journal Article, Journal of Association for Information Science and Technology, 2018 - Present

Reviewer Journal Article, ACM Transactions on Intelligent Systems and Technology, 2018 - Present

Reviewer Journal Article, Information Retrieval, 2018 - Present

Reviewer Grant Proposal, Leverhulme Trust, 2017 - Present

Reviewer Book, SpringerBriefs Series, 2017 - Present

Reviewer Journal Article, IEEE Transactions on Cybernetics, 2017 - Present

Reviewer Journal Article, ACM Transactions on Asian and Low-Resource Language Information Processing, 2017 - Present

Program Committee Member, ACM International Conference on Information and Knowledge Management (CIKM), 2017, 2018, 2020, 2017 - Present

Reviewer Journal Article, ACM Computing Surveys, 2016 - Present

Reviewer Journal Article, Neural Computation, 2016 - Present

Reviewer Journal Article, IEEE Transactions on Information Forensics and Security, 2016 - Present

Program Committee Member, International Joint Conference on Artificial Intelligence (IJCAI), 2016, 2018-2020, 2016 - Present

Editor Book, World Scientific Publishing Co. Pte. Ltd, 2015 - 2017

Reviewer Journal Article, Knowledge and Information Systems, 2015 - Present

Reviewer Journal Article, IEEE Intelligent Systems, 2015 - Present

Reviewer Journal Article, Data Mining and Knowledge Discovery, 2015 - Present

Reviewer Journal Article, ACM Transactions on Knowledge Discovery from Data, 2015 - Present

Program Committee Member, ACM International Conference on Web Search and Data Mining (WSDM), 2015, 2017, 2021, 2023, 2024, 2015 - Present

Reviewer Journal Article, ACM Transactions on Information Systems, 2014 - Present

Reviewer Journal Article, ACM Transactions on the Web, 2014 - Present

Reviewer Journal Article, Computational Linguistics, 2013 - Present

Reviewer Journal Article, IEEE Transactions on Knowledge and Data Engineering, 2013 - Present

Reviewer Journal Article, Information Systems, 2012 - Present

Program Committee Member, Annual Meeting of Association for Computational Linguistics (ACL), 2012, 2014-2021, 2023, 2012 - Present

Reviewer Journal Article, IEEE Transactions on Computer, 2011 - Present

Program Committee Member, Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), 2011-2017, 2019-2024, 2011 - Present

Program Committee Member, Conference on Empirical Methods in Natural Language Processing (EMNLP), 2010-2011, 2013-2017, 2020-2021, 2010 - Present