

Kai Hui

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(a) Education & Training

Saarland University, Saarbruecken, Germany	Doctor of Engineering (Dr. -Ing), 2017
University of Chinese Academy of Sciences, Beijing, China	Master of Engineering, 2013
Beijing Jiaotong University, Beijing, China	Bachelor of Management Science, 2010

(b) Experiences

2021.07 – present	Senior Research Software Engineer, Google Research, Berlin
2019.04 – 2021.06	Machine Learning Scientist, Amazon Alexa AI, Berlin
2017.11 – 2019.03	Data Scientist, Cluster of Excellence for Deep Learning in SAP SE, Berlin
2014.10 – 2015.02	Teaching Assistant, Graduate core course “Information Retrieval and Data Mining”
2013.04 – 2017.12	Doctoral Researcher, Max Planck Institute for Informatics
2012.01 – 2012.07	Research intern, Microsoft Research Asia

(c) Professional Services

1. Program Commit Member in ACM SIGIR Conference on Research Development in Information Retrieval [2018](#), [2019](#), [2020](#), [2021](#), [2022](#)
2. Program Commit Member in Annual Meeting of the Association for Computational Linguistics (ACL) [2019](#), [2020](#), [2021](#), [ARR](#)
3. Program Commit Member in Conference on Empirical Methods in Natural Language Processing (EMNLP) [2019](#), [2020](#), [2021](#)
4. Program Commit Member in Conference on Artificial Intelligence (AAAI) [2020](#), [2021](#), [2022](#)
5. Program Commit Member in ACM KDD '21 Applied Data Science Track: Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining [2021](#), [2022](#)
6. Program Commit Member in ACM international conference on Information and knowledge management (CIKM) [2020](#), [2021](#)
7. Program Commit Member in ACM international Conference on Web Search and Data Mining (WSDM) [2021](#), [2022](#)
8. Program Commit Member in Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL-HLT) [2021](#)
9. Program Commit Member in ACM SIGIR International Conference on Theory of Information Retrieval (ICTIR) [2020](#)
10. Program Commit Member in Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the International Joint Conference on Natural Language Processing (AACL-IJCNLP) [2020](#)
11. Program Commit Member in Conference of the European Chapter of the Association for Computational Linguistics (EACL) [2021](#)
12. Journal reviewer for [Transactions on Information Systems \(TOIS\)](#), [The Journal of the Association for Information Science and Technology \(JASIST\)](#)
13. Editor board member for [Information Processing & Management \(IP&M\)](#)

(d) Publications

1. **Kai Hui**, H. Zhuang, T. Chen, Z. Qin, J. Lu, D. Bahri, J. Ma, J. Gupta, C. N. dos Santos, Y. Tay, and D. Metzler, “ED2LM: Encoder-Decoder to Language Model for Faster Document Re-ranking Inference,” in *ACL (Findings) 2022 (to appear)*.
2. X. Chen, **Hui, Kai**, B. He, X. Han, L. Sun, and Z. Ye, “A Context-Aware BERT Retrieval Model Incorporating Local and Query-specific Context,” in *European Conference on Information Retrieval*, ECIR ’22 (to appear), Springer, 2022.
3. Y. Tay, V. Q. Tran, M. Dehghani, J. Ni, D. Bahri, H. Mehta, Z. Qin, **Hui, Kai**, Z. Zhao, J. Gupta, *et al.*, “Transformer memory as a differentiable search index,” *arXiv preprint arXiv:2202.06991*, 2022.
4. V. Aribandi, Y. Tay, T. Schuster, J. Rao, S. Zheng, S. V. Mehta, H. Zhuang, V. Q. Tran, D. Bahri, J. Ni, J. P. Gupta, **Kai Hui**, S. Ruder, and D. Metzler, “Ext5: Towards extreme multi-task scaling for transfer learning,” in *ICLR 2022 (to appear)*.
5. A. R. Katti, **Hui, Kai**, A. de Gispert, and H. Fuerstenau, “Question answering using web lists,” in *Proceedings of the 30th ACM International Conference on Information and Knowledge Management*, CIKM 2021.
6. X. Chen, B. He, **Hui, Kai**, Y. Wang, L. Sun, and Y. Sun, “Contextualized offline relevance weighting for efficient and effective neural retrieval,” in *Proceedings of the 44th International ACM SIGIR Conference on Research and Development in Information Retrieval*, SIGIR 2021 (**Best Short Paper Award**).
7. Z. Zheng, **Hui, Kai**, B. He, X. Han, L. Sun, and A. Yates, “Contextualized query expansion via unsupervised chunk selection for text retrieval,” *Information processing & management*, vol. 58, 2021.
8. Z. Zheng, **Hui, Kai**, B. He, X. Han, L. Sun, and A. Yates, “BERT-QE: Contextualized query expansion for document re-ranking,” in *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing: Findings*, (Online), pp. 4718–4728, Association for Computational Linguistics, Nov. 2020.
9. X. Chen, B. He, **Hui, Kai**, L. Sun, and Y. Sun, “Simplified TinyBERT: Knowledge distillation for document retrieval,” in *European Conference on Information Retrieval*, ECIR 2021, Springer.
10. **Hui, Kai**, A. Yates, K. Berberich, and G. de Melo, “PACRR: A position-aware neural ir model for relevance matching,” in *Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing*, EMNLP ’17, (Copenhagen, Denmark), Association for Computational Linguistics, September 2017.
11. **Hui, Kai**, A. Yates, K. Berberich, and G. de Melo, “Co-PACRR: A context-aware neural ir model for ad-hoc retrieval,” in *Proceedings of the 11th ACM International Conference on Web Search and Data Mining*, WSDM ’18, ACM, 2018.
12. **Hui, Kai**, A. Yates, K. Berberich, and G. de Melo, “Position-aware representations for relevance matching in neural information retrieval,” in *Proceedings of the 26th International Conference on World Wide Web Companion*, WWW ’17, pp. 799–800, International World Wide Web Conferences Steering Committee, 2017.
13. S. MacAvaney, **Hui, Kai**, and A. Yates, “An approach for weakly-supervised deep information retrieval,” in *Neu-IR’17: The SIGIR 2017 Workshop on Neural Information Retrieval*, 2017., 2017.

14. S. MacAvaney, A. Yates, **Hui, Kai**, and O. Frieder, “Content-based weak supervision for ad-hoc re-ranking,” in *Proceedings of the 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval*, SIGIR’19, (New York, NY, USA), p. 993–996, Association for Computing Machinery, 2019.
15. **Hui, Kai** and K. Berberich, “Transitivity, time consumption, and quality of preference judgments in crowdsourcing,” in *The 39th European Conference on Information Retrieval*, ECIR ’17, pp. 239–251, Springer International Publishing, 2017.
16. **Hui, Kai** and K. Berberich, “Low-cost preference judgment via ties,” in *The 39th European Conference on Information Retrieval*, ECIR ’17, pp. 626–632, Springer International Publishing, 2017.
17. **Hui, Kai** and K. Berberich, “Merge-tie-judge: Low-cost preference judgments with ties,” *Proceedings of the ACM SIGIR International Conference on Theory of Information Retrieval*, 2017.
18. C. Jin, B. He, **Hui, Kai**, and L. Sun, “Tdn: a two-stage deep neural network for prompt-independent automated essay scoring,” in *Proceedings of the 56th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 1088–1097, 2018.
19. C. Li, Y. Sun, B. He, L. Wang, **Hui, Kai**, A. Yates, L. Sun, and J. Xu, “NPRF: A neural pseudo relevance feedback framework for ad-hoc information retrieval,” in *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing*, pp. 4482–4491, 2018.
20. **Hui, Kai**, B. Gao, B. He, and T.-j. Luo, “Sponsored search ad selection by keyword structure analysis,” in *European Conference on Information Retrieval*, pp. 230–241, Springer, 2013.
21. **Hui, Kai**, B. He, T. Luo, and B. Wang, “Relevance weighting using within-document term statistics,” in *Proceedings of the 20th ACM international conference on Information and knowledge management*, pp. 99–104, 2011.
22. **Hui, Kai**, B. He, T. Luo, and B. Wang, “A comparative study of pseudo relevance feedback for ad-hoc retrieval,” in *Conference on the Theory of Information Retrieval*, pp. 318–322, Springer, 2011.
23. S. MacAvaney, A. Yates, A. Cohan, L. Soldaini, **Hui, Kai**, N. Goharian, and O. Frieder, “Characterizing question facets for complex answer retrieval,” in *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval*, pp. 1205–1208, 2018.
24. S. MacAvaney, A. Yates, A. Cohan, L. Soldaini, **Hui, Kai**, N. Goharian, and O. Frieder, “Overcoming low-utility facets for complex answer retrieval,” *Information Retrieval Journal*, vol. 22, no. 3-4, pp. 395–418, 2019.
25. **Hui, Kai** and K. Berberich, “Cluster hypothesis in low-cost ir evaluation with different document representations,” in *Proceedings of the 25th International Conference Companion on World Wide Web*, WWW ’16, pp. 47–48, International World Wide Web Conferences Steering Committee, 2016.
26. **Hui, Kai** and K. Berberich, “Selective labeling and incomplete label mitigation for low-cost evaluation,” in *International Symposium on String Processing and Information Retrieval*, SPIRE ’15, pp. 137–148, Springer International Publishing, 2015.
27. **Hui, Kai**, K. Berberich, and I. Mele, “Dealing with incomplete judgments in cascade measures,” in *Proceedings of the ACM SIGIR International Conference on Theory of Information Retrieval*, pp. 83–90, 2017.

28. Y. Ran, B. He, **Hui, Kai**, J. Xu, and L. Sun, “A document-based neural relevance model for effective clinical decision support,” in *2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, pp. 798–804, IEEE, 2017.
29. Y. Ran, B. He, **Hui, Kai**, J. Xu, and L. Sun, “Neural relevance model using similarities with elite documents for effective clinical decision support,” *International Journal of Data Mining and Bioinformatics*, vol. 20, no. 2, pp. 91–108, 2018.