Dongqi Cai (蔡栋琪)

PhD Student (Third Year)

School of Computer Science, Beijing University of Posts and Telecommunications, China

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Research Interests

Federated Learning, Efficient NLP System, Speech Privacy.

Education

09/2021 – present **PhD in Computer Science and Technology**, BUPT

- Advisor: Prof. Shangguang Wang, Prof. Mengwei Xu
- Remote Advisor: Prof. Felix Xiaozhu Lin

09/2017 – 07/2021 **BS in Communication Engineering**, BUPT

- Advisor: Prof. Lin Fan

Employment & Experience

07/2021 – 12/2021 **Research Intern**, Webank

- Mentor: Dr. Lixin Fan

Honors & Awards

- National Scholarship, Ministry of Education, 2023
- Outstanding Graduate Student, BUPT, 2023
- Excellent Ph.D. Students Foundation, BUPT, 2023
- Outstanding Graduate Student, State Key Laboratory of Networking and Switching Technology, 2022/2023
- First-class academic scholarship, BUPT, 2022
- National-Level, Innovation and Entrepreneurship Projects for College Students, 2019

Conference Publications (* = equal contributions)

(full list at https://scholar.google.com/citations?user=dIimkboAAAAJ&hl=zh-CN)

[1] "Rethinking Mobile AI Ecosystem in the LLM Era"

Jinliang Yuan*, Chen Yang*, **Dongqi Cai***, Shihe Wang, Xin Yuan, Zeling Zhang, Xiang Li, Dingge Zhang, Hanzi Mei, Xianqing Jia, Shangguang Wang, Mengwei Xu, in *Proc. ACM*

*Int. Conf. Mobile Computing and Networking (**MobiCom, CCF-A**)*, 2024. Conditionally accept.

[2] “Federated Few-shot Learning for Mobile NLP”

Dongqi Cai, Shangguang Wang, Yaozong Wu, Felix Xiaozhu Lin, Mengwei Xu, in *Proc. ACM Int. Conf. Mobile Computing and Networking (**MobiCom, CCF-A**)*, 2023.

[3] “Efficient Federated Learning for Modern NLP”

Dongqi Cai, Yaozong Wu, Shangguang Wang, Felix Xiaozhu Lin, Mengwei Xu, in *Proc. ACM Int. Conf. Mobile Computing and Networking (**MobiCom, CCF-A**)*, 2023.

[4] “Towards Practical Few-shot Federated NLP”

Dongqi Cai, Yaozong Wu, Haitao Yuan, Shangguang Wang, Felix Xiaozhu Lin, Mengwei Xu, in *Proceedings of the 3rd Workshop on Machine Learning and Systems (**EuroMLSys**), co-located with European Conference on Computer Systems (EuroSys, CCF-A),* 2023.

[5] “GPT4D: Automatic Cross-Version Linux Driver Upgrade Toolkit”

Borui Yang, Hongyu Li, **Dongqi Cai**, in *the 8th EAI International Conference on Machine Learning and Intelligent Communications (MLICOM)*, 2023.

[6] “FedAdapter: Efficient Federated Learning for Mobile NLP”

Dongqi Cai, Shangguang Wang, Yaozong Wu, Mengwei Xu, in *Proceedings of the ACM Turing Award Celebration Conference (TURC)*, 2023.

[7] “Towards ubiquitous learning: A first measurement of on-device training performance”

Dongqi Cai, Qipeng Wang, Yuanqiang Liu, Yunxin Liu, Shangguang Wang, Mengwei Xu, in *Proceedings of the 5th International Workshop on Embedded and Mobile Deep Learning* (***EMDL***), *co-located with ACM International Conference on Mobile Systems, Applications, and Services (MobiSys, CCF-B),* 2021.

[8] “Mitigating App Collusion using Machine Learning”

Xuefei Duan, Hua Lu, Jinliang Yuan, Qiyang Zhang, **Dongqi Cai**, in *IEEE 7th International Conference on Big Data Intelligence and Computing (DataCom)*, 2021.

Journal Publications

[1] “Accelerating Vertical Federated Learning”

Dongqi Cai, Tao Fan, Yan Kang, Lixin Fan, Mengwei XU, Shangguang Wang, Qiang Yang, early access in *IEEE Transactions on Big Data (IEEE TBD)*, 2022.

[2] “Implementation of an E-payment security evaluation system based on quantum blind computing”

Dongqi Cai, Xi Chen, Yuhong Han, Xin Yi, Jinping Jia, Cong Cao, Ling Fan, in *International Journal of Theoretical Physics (IJTP),* 2020.

Patents

[1]“一种基于前向梯度的联邦学习方法、系统及装置”

徐梦炜; 武耀宗; **蔡栋琪**; 王尚广 ，第二学生发明人，实质审查的生效

[2]“面向自然语言模型的联邦小样本学习方法、系统及设备”

徐梦炜; **蔡栋琪**; 周傲; 马骁; 王尚广，第一学生发明人，实质审查的生效

[1]“一种面向预训练模型的联邦学习方法、装置及系统”

徐梦炜; **蔡栋琪**; 周傲; 马骁; 王尚广，第一学生发明人，实质审查的生效

[1]“纵向联邦学习建模优化方法、设备、介质及程序产品”

蔡栋琪; 范力欣; 杨强，第一学生发明人，实质审查的生效

Academic Services

- **TPC Member**
  MobiCom’24 AE, NCSC-edge'22, TURC-SIGBED-China'23
- **Reviewer**
  TMC, TKDE, IoTJ, SAGC'22, ICASSP'24.
- **External Reviewer**
  EIS'21, ICWS'23