

BRIEF CURRICULUM VITAE

Song Guo

ACADEMIC QUALIFICATIONS

Ph.D. University of Ottawa, Canada
M.E. Beijing University of Posts and Telecommunications, China
B.E. Huazhong University of Science and Technology, China

PROFESSIONAL EXPERIENCE

2016- Professor, Department of Computing, The Hong Kong Polytechnic University
2007-2016 Professor/Senior Associate Professor/Associate Professor, The University of Aizu, Japan
2006-2007 Assistant Professor, University of Northern British Columbia, Canada
2006 Postdoctoral Fellow, University of British Columbia, Canada

RESEARCH INTERESTS

Edge AI, Big Data and Cloud Computing, IoT

RESEARCH GRANTS

Principle Investigator (PI) and Co-PI of over 40 research projects funded by RGC, ITF, NSFC, MOST, NSF, JSPS, MIC, JST, NRC, and industries

- RGC Research Impact Fund (RIF), “Edge Learning: the Enabling Technology for Distributed Big Data Analytics in Cloud-Edge Environment”, 2020-2025, Project Coordinator (PC), 7,640,000 HKD.
- RGC General Research Fund (GRF), “Federated Learning with Non-IID Data over Resource-Constrained Mobile Edge Networks”, 2021-2023, PI, 1,057,394 HKD.
- RGC General Research Fund (GRF), “Proactive and Cooperative Resource Allocation in Wide-scale Edges”, 2020-2022, PI, 935,141 HKD.

AWARDS AND HONORS

- IEEE Fellow (CS) for contributions to high performance and resilient distributed computing
- 2020 Highly Cited Researcher, Clarivate Web of Science
- Changjiang Chair Professor, Ministry of Education, China, 2020-2023
- ACM Distinguished Member
- 2020 Hong Kong Social Enterprise Competition Intellectual Property Ambassador Award
- 2019 IEEE ComSoc TCBD Best Conference Paper Award
- 2018 IEEE TCGCC Best Magazine Paper Award
- 2019 & 2017 IEEE Systems Journal Best Paper Award, IEEE Systems Council
- Publication included in 21st Annual Best of Computing - Notable Books and Articles in Computing of 2016, ACM Computing Reviews
- Best Paper Award: ICPP-20, IEEE MSN-20, ACIIDS-18, IEEE GLOBECOM-16, IEEE TrustCom-16, ACM IMCOM-14, IEEE CSE-11, IEEE HPCC-08
- First Prize, COMSOC Student Competition 2016 (as supervisor)
- The Award of Funai Foundation for Information Technology, Japan, 2008
- Keynote speeches at 35+ international conferences

PROFESSIONAL ACTIVITIES

- Editor-in-Chief, IEEE Open Journal of the Computer Society (2020-2022)
- Member of Board of Governor, IEEE Communications Society, 2018-2019
- Distinguished Lecturer, IEEE Communications Society, 2016-2017
- Member of Engineering Panel, RGC (Research Grants Council), Hong Kong
- Associate Editor, IEEE TCC (2018-present), IEEE TSUSC (2017-present), IEEE TGCN (2016-present), IEEE TETC (2013-2018), IEEE TPDS (2011-2015), etc.
- Editor, IEEE Network (2018-present), IEEE Communications (2015-2018), etc.
- Organizing/Program committee member for many conferences, including top conferences INFOCOM, ICDCS, PERCOM, GLOBECOM, ICC, WCNC, VTC

TEACHING AND SUPERVISION

- Taught 10+ subjects at different levels in various areas over the past 14 years
- Supervised 10+ postdoctoral fellows, 20+ PhD students and 30+ Master students

SELECTED RECENT PUBLICATIONS

(10 authored/edited books, 250+ journal papers, 200+ conference papers, 10 book chapters)

1. Qihua Zhou, Song Guo, Zhihao Qu, Peng Li, Li Li, Minyi Guo, and Kun Wang, "Petrel: Heterogeneity-aware Distributed Deep Learning via Hybrid Synchronization", *IEEE Transactions on Parallel and Distributed Computing*, vol. 32, no. 5, May 2021, pp. 1030-1043.
2. Zicong Hong, Song Guo, Peng Li, and Wuhui Chen, Pyramid: A Layered Sharding Blockchain System, *IEEE Conference on Computer Communications (INFOCOM)*, May 2021.
3. Qihua Zhou, Kun Wang, Haodong Lu, Wenyao Xu, Yanfei Sun, and Song Guo, "Canary: Decentralized Distributed Deep Learning via Gradient Sketch and Partition in Multi-interface Networks", *IEEE Transactions on Parallel and Distributed Computing*, vol. 32, no. 4, April 2021, pp. 900-917.
4. Xiaojie Wang, Zhaolong Ning, and Song Guo, "Multi-agent Imitation Learning for Pervasive Edge Computing: A Decentralized Computation Offloading Algorithm", *IEEE Transactions on Parallel and Distributed Computing*, vol. 32, no. 2, February 2021, pp. 411-425.
5. Qihua Zhou, Song Guo, Haodong Lu, Li Li, Minyi Guo, Yanfei Sun and Kun Wang, "Falcon: Addressing Stragglers in Heterogeneous Parameter Server via Multiple Parallelism", *IEEE Transactions on Computers*, vol. 70, no. 1, January 2021, pp. 139-155.
6. Jingcai Guo, Shiheng Ma, Jie Zhang, Qihua Zhou, and Song Guo, "Dual-view Attention Networks for Single Image Super-Resolution", *ACM International Conference on Multimedia (MM)*, Seattle, USA, October 2020.
7. Shigeng Zhang, Yinggang Li, Xuan Liu, Song Guo, Weiping Wang, and Jianxin Wang, "Towards Real-time Cooperative Deep Inference over the Edge and End Devices", *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, Cancun, Mexico, September 2020.
8. Yufeng Zhan, Song Guo, Peng Li, and Jiang Zhang, "A Deep Reinforcement Learning based Offloading Game in Edge Computing", *IEEE Transactions on Computers*, vol. 69, no. 6, June 2020, pp. 883-893.
9. Lin Gu, Deze Zeng, Wei Li, Song Guo, Albert Y. Zomaya, and Hai Jin, "Intelligent VNF Orchestration and Flow Scheduling via Model-assisted Deep Reinforcement Learning", *IEEE Journal on Selected Areas in Communications*, vol. 38, no. 2, February 2020, pp. 279-291.
10. Yufeng Zhan, Peng Li and Song Guo, "Experience-Driven Computational Resource Allocation of Federated Learning by Deep Reinforcement Learning", *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, New Orleans, USA, May 2020.