

## Curriculum Vitae



### **Associate Professor Zhu Yongqing**

Head, Information and Communication Technology Programme  
School of Science & Technology

Tel : +65 6248 9640

### **Education Qualifications**

2006	PhD, Nanyang Technological University, Singapore
1996	B.Eng., Beijing University of Posts and Telecommunications, China

### **Academic and Professional Experience**

2021 - Present	Head, Information and Communication Technology (ICT) Programme, School of Science & Technology, Singapore University of Social Sciences
2019 - 2021	Deputy Head, Information and Communication Technology (ICT) Programme, School of Science & Technology, Singapore University of Social Sciences
2018 - 2019	Scientist, Institute of High Performance Computing, A*STAR
2009 - 2018	Project Leader, Data Storage Institute, A*STAR
2006 - 2018	Scientist, Data Storage Institute, A*STAR
2005 - 2006	Software Engineer, MediaRing LTD, Singapore
1996 - 2001	Research Associate, China Academy of Telecommunication Research, China

### **Memberships and Professional Activities**

2019 – Present	Member, Association for Computing Machinery (ACM), USA
2017 – Present	Senior Member, Institute of Electrical and Electronics Engineers (IEEE), USA
2017 – Present	Project Management Professional (PMP), Project Management Institute
2006 – 2017	Member, Institute of Electrical and Electronics Engineers (IEEE), USA
2008 – Present	Reviewer for journals: IEEE Access, Future Generation Computer Systems, Journal of Supercomputing, IEEE Communications Letters, Elsevier Journal of Computer Communications, etc.

### Consultation and Executive Experience

- 2020 – Present IEEE Singapore Intelligent Transportation Systems Society (ITSS), Executive Committee Member
- 2013 – Present IEEE Singapore Broadcast Technology Society (BTS) Chapter, various roles in Executive Committee as Chair, Vice-chair, Secretary, Treasure, etc.

### Research Interests

- Parallel computing and distributed system
- Big data analytics and data management
- Cloud computing and resource management
- Information Security and privacy preserving

### Selected Publications

#### Book Chapters:

- Quanqing Xu, Khin Mi Mi Aung, Yongqing Zhu, Khai Leong Yong, "A Blockchain-Based Storage System for Data Analytics in the Internet of Things". *New Advances in the Internet of Things*, Springer, USA, Vol. 715, 2017, pp. 119-138.
- Yongqing Zhu and Maode Ma, "Overview of MAC Protocols for EPONs," *Current Research Progress of Optical Networks*, edited by M. Ma, Springer, USA, 2009, pp. 113-143.

#### Journal Papers:

- Yongqing Zhu, Juniarto Samsudin, Renuga Kanagavelu, Weiwen Zhang, Long Wang, Theint Theint Aye, Rick Siow Mong Goh, "Fast Recovery MapReduce (FAR-MR) to accelerate failure recovery in big data applications", *Journal of Supercomputing*, Dec. 2018, <https://doi.org/10.1007/s11227-018-2716-8>.
- Renuga Kanagavelu, Zhu Yongqing, "A Pro-active and adaptive mechanism for fast failure recovery in SDN Data Centers", *Advances in Information and Communication Networks*, Vol. 886, Nov. 2018.
- Yongqing Zhu, Quanqing Xu, Haixiang Shi, Juniarto Samsudin, "An Efficient Distributed Search Solution for Federated Cloud", *Distributed and Parallel Databases*, Sep. 2017, pp. 1-23.
- Quanqing Xu, Khin Mi Mi Aung, Yongqing Zhu, Khai Leong Yong, "Building a Large-scale Object-based Active Storage Platform for Data Analytics in the Internet of Things". *Journal of Supercomputing*, Vol. 72, Issue 7, July 2016, pp. 2796–2814.
- Yu Yang, Zhu Yongqing, Juniarto Samsudin, "Distributed Metadata Search for the Cloud", *Journal of Communications*, Vol. 11, No. 1, Jan. 2016, pp. 100-107.
- Yongqing ZHU, Yang YU, Willie NG, Samsudin JUNIARTO, "Index and Search for Hierarchical Key-Value Data Store", *Journal of Computational Information Systems*, Vol. 11, No. 4, Feb. 2015, pp. 1179-1186.
- Yu Yang, Zhu Yongqing, Ng Wil Lie, Juniarto Samsudin, Li Zhixiang, "A File Assignment Strategy towards Minimized Response Time for Parallel Storage Systems", *IEEE Transactions on Magnetics*, Vol. 49, Issue 6, June 2013, pp. 2459-2465.

- Yang Yu, Shuo Fang, Khin Mi Mi Aung, Chuan Heng Foh, Hui Li, Yongqing Zhu, "A layer 2 multipath solution and its performance evaluation for Data Center Ethernets", *International Journal of Communication Systems*, Vol. 26, Issue 1, Jan. 2013.
- Yongqing Zhu and Maode Ma, "IPACT with Grant Estimation (IPACT-GE) Scheme for Ethernet Passive Optical Networks", *IEEE/OSA Journal of Lightwave Technology*, Vol. 26, Issue14, July 2008, pp. 2055-2063.
- Yongqing Zhu, Maode Ma, and T. H. Cheng, "An Efficient Solution for Mitigating Light Load Penalty in EPONs," *Computers & Electrical Engineering*, Vol. 32, No. 6, November 2006, pp. 426–431.
- Yongqing Zhu and Maode Ma, "Supporting Differentiated Services with Fairness By an Urgency Fair Queuing Scheduling Scheme in EPONs", *Photonic Network Communications*, Vol.12, No.1, 2006, pp. 99-110.
- Yongqing Zhu, Maode Ma, Tee Hiang Cheng, "Hierarchical Scheduling to Support Differentiated Services in Ethernet Passive Optical Networks", *Computer Networks*, Vol. 50, Issue 3, February 2006, pp. 350-366.
- Maode Ma, Yongqing Zhu, Tee Hiang Cheng, "A Systematic Scheme for Multiple Access in Ethernet Passive Optical Access Networks", *IEEE/OSA Journal of Lightwave Technology*, Vol. 23, No.11, 2005, pp. 3671-3682.

**Conference Papers:**

- Yongqing Zhu, Paul Horng Jyh Wu, Fang Liu, Renuga Kanagavelu, "Disk Failure Prediction for Software-Defined Data Centre (SDDC)", the 7<sup>th</sup> IEEE International Conference on Cloud and Big Data Computing (IEEE CBDCom 2021) , 25-28 Oct 2021 (Outstanding Paper Award).
- Leong Kai Ming Jeremy, Ching Chi Man Raymond, Yongqing Zhu, Paul Horng Jyh Wu, "An Eldercare Control System in IoT Cloud Environment", the Seventh IRC Conference on Engineering and Technology (IRC-SET) 2021, 7 August 2021.
- Jiaqiang Yeow, Yongqing Zhu, Paul Horng Jyh Wu, Fang Liu, "IoT Smart Trolley System For Healthcare", the Sixth IRC Conference on Engineering and Technology (IRC-SET) 2020, 18 July 2020 (Best Paper award).
- Renuga Kanagavelu, Zhu Yongqing, Khin MiMi Aung, "TOSS: Traffic-aware distributed object-based storage using software-defined networks", *Proc. of The 2018 IEEE International Conference on Service Operations and Logistics, and Informatics (SOLI 2018)*, July-Aug. 2018.
- Renuga Kanagavelu, Zhu Yongqing, "A Pro-active and adaptive mechanism for fast failure recovery in SDN Data Centers", *Proc. Of The Future of Information and Communication Conference (FICC2018)*, Apr. 2018.
- Haixiang Shi, Yongqing Zhu, Juniarto Samsudin, "Reference-based data compression for genome in cloud", *Proc. of the 2ndInternational Conference on Communication and Information Processing (ICCIP'2016)*, Nov. 2016, pp. 55-59.
- Yongqing Zhu, Quanqing Xu, Haixiang Shi, Juniarto Samsudin, "DS-Index: A Distributed Search Solution for Federated Cloud", *Proc. of IEEE11thInternational Conference on Networking, Architecture and Storage (NAS'2016)*, Aug. 2016.
- Yongqing Zhu, Samsudin Juniarto, Haixiang Shi, Jun Wang, "VH-DSI: Speeding Up Data Visualization via A Heterogeneous Distributed Storage Infrastructure", *Proc. of IEEE 21stInternational Conference on Parallel and Distributed Systems (ICPADS'2015)*, Dec. 2015, pp. 658-665.

- Yu Yang, Zhu Yongqing, Juniarto Samsudin, "Distributed Metadata Search in the Cloud", Proc. of the 7th International Conference on Future Computer and Communication (ICFCC 2015), May 2015.
- Quanqing Xu, Khin Mi Mi Aung, Yongqing Zhu, Khai Leong Yong, "A Large-scale Object-based Active Storage Platform for Data Analytics in the Internet of Things", Proc. of The 9th International Conference on Multimedia and Ubiquitous Engineering (MUE-15), May 2015, pp: 405-413 (Invited paper).
- Yang Yu, Yongqing Zhu, Willie Ng, Samsudin Juniarto, "An efficient multidimensional Metadata index and search for cloud data", Proc. of IEEE 6th International Conference on Cloud Computing Technology and Science (CloudCom'2014), Dec. 2014, pp. 499-504.
- Xiuju Fu; Xiaorong Li; Yongqing Zhu; Lipo Wang; Goh, R.S.M. "An Intelligent Analysis and Prediction Model for On-demand Cloud Computing Systems", Proc. of International Joint Conference on Neural Networks (IJCNN'2014), July 2014, pp. 1036-1041.
- Willie Ng, Yang Yu, Yongqing Zhu, Jun Wang, Samsudin Juniarto, Zhixiang Li and Jie Chen, "VisDSI: Locality Aware I/O Solution for Large Scale Data Visualization", Proc. of IEEE/ACM 6th International Conference on Utility and Cloud Computing (UCC'2013), Dec. 2013, pp. 278-281.
- Yu Yang, Zhu Yongqing, Ng Wil Lie, Juniarto Samsudin, Li Zhixiang, "Optimized sort partition: A file assignment strategy to achieve minimized response time for parallel storage systems", Proc. of Asia-Pacific Magnetic Recording Conference (APMRC 2012 Digest), Oct. 2012, pp. 1-8.
- Yongqing Zhu, Yang Yu, Yonghong Wang, Sufui Tan, and Tee Chong Low, "A Balanced Allocation Strategy for File Assignment in Parallel I/O Systems", Proc. of IEEE 5th International Conference on Networking, Architecture and Storage (NAS'2010), July 2010, pp. 257-266.
- Renuga K., Tan S.S, Zhu Y.Q., Low T.C., Wang Y.H., "Balanced and Efficient Data Placement and Replication Strategy for Distributed Backup Storage Systems", Proc. of IEEE 12th International Conference on Computational Science and Engineering (CSE'2009), August 2009.
- Yongqing Zhu, Maode Ma, Tee Hiang Cheng, "IPACT with Grant Estimation for EPON", Proc. of IEEE 10th International Conference on Communications Systems (ICCS'2006), October 2006, pp. 1-5.
- Yongqing Zhu and Maode Ma, "An Urgency Fair Queuing Scheduling to Support Differentiated Services in EPONs", Proc. of IEEE GLOBECOM'2005, Vol. 4, December 2005, pp. 1925-1929.
- Yongqing Zhu, Maode Ma, Tee Hiang Cheng, "An efficient multiple access control scheme to support differentiated services in EPONs", Proc. of IEEE International Conference on Communications (ICON'2004), November 2004, pp. 147-151.
- Yongqing Zhu, Maode Ma, Tee Hiang Cheng, "Differentiated services supported by bandwidth guarantee polling (BGP) scheme in Ethernet passive optical networks", Proc. of IEEE 9th International Conference on Communications Systems (ICCS'2004), Sep. 2004, pp. 371-375.
- Yongqing Zhu, Maode Ma, Tee Hiang Cheng, "A Novel Multiple Access Scheme for Ethernet Passive Optical Networks", Proc. of IEEE GLOBECOM'2003, Vol. 5, December 2003, pp. 2649-2653.
- Maode Ma, Yongqing Zhu, Tee Hiang Cheng, "A Bandwidth Guaranteed Polling MAC Protocol for Ethernet Passive Optical Networks", Proc. of IEEE INFOCOM'2003, Vol. 1, March-April 2003, pp. 22-31.

## Patents

Yongqing Zhu, Samsudin Juniarto, and Haixiang Shi; "Fast Recovery MapReduce (FAR-MR)", endorsed by EPTL, A\*STAR, Sep 2017.

Yongqing Zhu, Quanqing Xu, Haixiang Shi, and Samsudin Juniarto; "Method of Facilitating Distributed Data Searching in a Federated Cloud and System Thereof", filed by IPOS, WO2017155464, Mar 2017.

Yongqing Zhu, Yang Yu, Wil Lie Ng, Samsudin Juniarto, and Zhixiang Li; "HybridSearch: A Search Solution for Hybrid Metadata", endorsed by EPTL, A\*STAR, Aug 2013.

Yongqing Zhu, Sufui Tan Sophia, Rajesh Vellore Arumugam, Zhixiang Li, and Yang Yu; "A Search System for Hierarchical Data Objects (S2HDO)", endorsed by EPTL, A\*STAR, Aug 2011.

*Updated on 5 July 2022*