Yuanqing Zheng

Associate Professor
Department of Computing
The Hong Kong Polytechnic University
Hung Hom, Kowloon, Hong Kong

Office: PQ721, Mong Man Wai Building
Phone: +852 2766 7288
Email: yqzheng@polyu.edu.hk
http://www.comp.polyu.edu.hk/~csyqzheng/

APPOINTMENT

- July 2020 – Now: Associate Professor, Department of Computing, The Hong Kong Polytechnic University
- Dec 2014 – Jun 2020: Assistant Professor, Department of Computing, The Hong Kong Polytechnic University

EDUCATION

- 2010 – 2014: Ph.D. in Computer Science, Nanyang Technological University, Singapore.
- 2007 – 2010: M.E. in Communication and Information System, Beijing Normal University, China.
- 2003 – 2007: B.S. in Electrical Engineering, Beijing Normal University, China.

RESEARCH INTERESTS

Wireless Networking and Mobile Computing, Acoustic and RF Sensing, Internet of Things (IoT)

TEACHING

- COMP1011 Programming Fundamentals: 2018-2, 2021-2, 2022-2, 2023-2
- COMP5211 Software Engineering Concepts: 2017-1, 2018-1
- COMP5311 Internet Infrastructure and Protocols: 2019-1, 2019-2, 2020-1, 2020-2, 2021-1, 2021-2, 2022-1, 2023-1
- COMP5325 Distributed Computing: 2016-1
- COMP5327 Wireless Networking and Mobile Computing: 2019-2
- COMP5525 Information Security: Technologies and Systems: 2017-2
- COMP5536 Knowledge Management and Applications: 2015-2, 2016-2, 2017-2

AWARDS

- Test of Time Award in ACM SenSys 2022 – IODetector in SenSys'12
- Best Paper Candidate in ACM SenSys 2022
- Best Paper Candidate in IEEE INFOCOM 2021
- Best Paper Award in IEEE INFOCOM 2020
- Distinguished TPC Member of IEEE INFOCOM 2017, 2018, 2021, 2022, and 2023
- Exemplary Reviewer Award IEEE Transactions on Wireless Communications in 2018
- Best Reviewer Award IEEE Transactions on Wireless Communications in 2017
- Best Demo Award in IEEE SECON 2014
- Champion in COMP Best Capstone Project Award Competition 2022 (as Supervisor)
- Champion in FENG Best Inter-departmental Final Year Project Award Competition 2022 and 2023 (as Supervisor)

RESEARCH

Refereed Conference Publications

1. [**MobiCom'24**] Shiming Yu, Xianjin Xia, Ningning Hou, **Yuanqing Zheng**, Tao Gu, "Revolutionizing LoRa Gateway with XGate: Scalable Concurrent Transmission across Massive Logical Channels", *The 30th Annual International Conference On Mobile Computing And Networking (ACM MobiCom)*, September 30 - October 4, 2024, Washington, D.C., USA.

2. [**INFOCOM'24**] Qiang Yang, **Yuanqing Zheng**, "Neural Enhanced Underwater SOS Detection", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 20–23 May 2024, Vancouver, Canada.

3. [**INFOCOM'24**] Kaiyan Cui, Leming Shen, **Yuanqing Zheng**, Fu Xiao, Jinsong Han, "Talk2Radar: Talking to mmWave Radars via Smartphone Speaker", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 20–23 May 2024, Vancouver, Canada.

4. [**SenSys'23**] Qiang Yang, **Yuanqing Zheng**, "AquaHelper: Underwater SOS Transmission and Detection in Swimming Pools", *The 21th ACM Conference on Embedded Networked Sensor Systems (SenSys 2023)*, Nov 2023, Istanbul, Turkiye.

5. [**SenSys'23**] Sijie Ji, Xuanye Zhang, **Yuanqing Zheng**, Mo Li, "Construct 3D Hand Skeleton with Commercial WiFi", *The 21th ACM Conference on Embedded Networked Sensor Systems (SenSys 2023)*, Nov 2023, Istanbul, Turkiye.

6. [**MobiCom'23**] Xianjin Xia, Qianwu Chen, Ningning Hou, **Yuanqing Zheng**, Mo Li, "XCopy: Boosting Weak Links for Reliable LoRa Communication", *The 29th Annual International Conference On Mobile Computing And Networking (ACM MobiCom)*, Oct 2023, Madrid, Spain.

7. [**IPSN'23**] Kaiyan Cui, Qiang Yang, **Yuanqing Zheng**, Jinsong Han, "mmRipple: Communicating with mmWave Radars through Smartphone Vibration", *ACM IPSN*, 2023.

8. [**INFOCOM'23**] Ningning Hou, Xianjin Xia, Yifeng Wang, **Yuanqing Zheng**, "One Shot for All: Quick and Accurate Data Aggregation for LPWANs", *In IEEE INFOCOM*, 2023.

9. [**INFOCOM'23**] Qiang Yang, Kaiyan Cui, **Yuanqing Zheng**, "VoShield: Voice Liveness Detection with Sound Field Dynamics", *In IEEE INFOCOM*, 2023.

10. [**SenSys'22**] Xianjin Xia, Qianwu Chen, Ningning Hou, **Yuanqing Zheng**, "HyLink: Towards High Throughput LPWANs with LoRa Compatible Communication", *The 20th ACM Conference on Embedded Networked Sensor Systems (ACM SenSys)*, 6-9 November 2022, (**Best Paper Candidate in ACM SenSys 2022**).

11. [**MobiCom'22**] Weiye Xu, Wenfan Song, Jianwei Liu, Yajie Liu, Xin Cui, **Yuanqing Zheng**, Jinsong Han, Xinhuai Wang, Kui Ren, "Mask Does Not Matter: Anti-Spoofing Face Authentication using mmWave without On-site Registration", *The 28th Annual International Conference On Mobile Computing And Networking (ACM MobiCom)*, 17-21 Oct 2022.

12. [**INFOCOM'22**] Ningning Hou, Xianjin Xia, **Yuanqing Zheng**, "Don't Miss Weak Packets: Boosting LoRa Reception with Antenna Diversities", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 2-5 May 2022, Virtual Conference.

13. [**INFOCOM'22**] Qiang Yang, **Yuanqing Zheng**, "DeepEar: Sound Localization with Binaural Microphones", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 2-5 May 2022, Virtual Conference.

14. [**MobiCom'21**] Xianjin Xia, Ningning Hou, **Yuanqing Zheng**, Tao Gu, "PCube: Scaling LoRa Concurrent Transmissions with Reception Diversities", *The 27th Annual International Conference On Mobile Computing And Networking (ACM MobiCom)*, 31 January 2022 – 04 February 2022, New Orleans, United States.

15. [**ICPADS'21**] Qianwu Chen, Xianjin Xia, Zhigang Li, **Yuanqing Zheng**, "Collaborative Transmission over Intermediate Links in Duty-Cycle WSNs", *IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, 14-16 Dec 2021, Beijing China.

16. [**UbiComp'21**] Qiang Yang, **Yuanqing Zheng**, "Model-based Head Orientation Estimation for Smart Devices", *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, September 2021, Virtual Conference.

17. [**INFOCOM'21**] Ningning Hou, Xianjin Xia, **Yuanqing Zheng**, "Jamming of LoRa PHY and Countermeasure", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 10-13 May 2021, Virtual Conference.

18. [**INFOCOM'21**] Kaiyan Cui, Yanwen Wang, **Yuanqing Zheng**, Jinsong Han, "ShakeReader: 'Read' UHF RFID using Smartphone", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 10-13 May 2021, Virtual Conference.

19. [**INFOCOM'21**] Weiye Xu, Jianwei Liu, Shimin Zhang, **Yuanqing Zheng**, Feng Lin, Jinsong Han, Fu Xiao, Kui Ren, "RFace: Anti-Spoofing Facial Authentication Using COTS RFID", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 10-13 May 2021, Virtual Conference, (**Best Paper Candidate in IEEE INFOCOM 2021**).

20. [**ICNP'20**] Ningning Hou, **Yuanqing Zheng**, "CloakLoRa: A Covert Channel over LoRa PHY", *The 28th IEEE International Conference on Network Protocols (IEEE ICNP)*, Virtual Conference, Oct 13-16, 2020.

21. [**INFOCOM'20**] Yanwen Wang, Jiaxing Shen, **Yuanqing Zheng**, "Push the Limit of Acoustic Gesture Recognition", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 6-9 July 2020, Virtual Conference, (**Best Paper Award in IEEE INFOCOM 2020**).

22. [**INFOCOM'20**] Xianjin Xia, **Yuanqing Zheng**, Tao Gu, "LiteNap: Downclocking LoRa Reception", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 6-9 July 2020, Virtual Conference.

23. [**SenSys'19**] Xianjin Xia, **Yuanqing Zheng**, Tao Gu, "FTrack: Parallel Decoding for LoRa Transmissions", *the 17th ACM Conference on Embedded Networked Sensor Systems (ACM SenSys 2019)*, November 10-13, 2019, New York, NY, USA.

24. [**UbiComp'19**] Yanwen Wang, **Yuanqing Zheng**, "Modeling RFID Signal Reflection for Contact-free Activity Recognition", *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, Volume 2, issue 4, December 2018, Article No. 193, DOI: 10.1145/3287071.

25. [**UbiComp'18**] Tianben Wang, Daqing Zhang, **Yuanqing Zheng**, Tao Gu, Xingshe Zhou, and Bernadette Dorizzi, "C-FMCW Based Contactless Respiration Detection Using Acoustic Signal", *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, Volume 1 Issue 4, December 2017, Article No. 170, DOI: 10.1145/3161188.

26. [**ICDCS'17**] Yuxiao Hou, Yanwen Wang, **Yuanqing Zheng**, "TagBreathe: Monitor Breathing with Commodity RFID Systems", *IEEE 37th International Conference on Distributed Computing Systems (IEEE ICDCS)*, 5-8 June 2017, DOI: 10.1109/ICDCS.2017.76.

27. [**ICDCS'17**] Saiyu Qi, **Yuanqing Zheng**, Xiaofeng Chen, Jianfeng Ma, Yong, Qi, "Double-Edged Sword: Incentivized Verifiable Product Path Query for RFID-enabled Supply Chain", *IEEE 37th International Conference on Distributed Computing Systems (IEEE ICDCS)*, 5-8 June 2017, DOI: 10.1109/ICDCS.2017.265.

28. [**INFOCOM'17**] Yuxiao Hou, **Yuanqing Zheng**, "PHY Assisted Tree-based RFID Identification", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 1-4 May 2017, DOI: 10.1109/INFOCOM.2017.8056984.

29. [**INFOCOM'17**] Min Chen, Jia Liu, Shigang Chen, Yan Qiao, **Yuanqing Zheng**, "DBF: A General Framework for Anomaly Detection in RFID Systems", *The IEEE International Conference on Computer Communications (IEEE INFOCOM)*, 1-4 May 2017, DOI: 10.1109/INFOCOM.2017.8056986.

30. [**MobiCom'15**] Jiajue Ou, Mo Li, **Yuanqing Zheng**, "Come and Be Served: Parallel Decoding for COTS RFID Tags", *The 21st Annual International Conference on Mobile Computing and Networking (ACM MobiCom)*, Paris, France, September 2015, pages 500-51, DOI: 10.1145/2789168.2790101.

31. [**MobiHoc'15**] Zhenjiang Li, Wan Du, **Yuanqing Zheng**, Mo Li, Dapeng Wu, "From Rateless to Hopless", *The 16th International Symposium on Mobile Ad Hoc Networking and Computing (ACM MobiHoc)*, Hangzhou, China, 2015, pages 107-116, DOI: 10.1145/2746285.2746308.

32. [**INFOCOM'15**] Yuxiao Hou, Jiajue Ou, **Yuanqing Zheng**, Mo Li, "PLACE: Physical Layer Cardinality Estimation for Large-Scale RFID Systems", *The 34th IEEE International Conference on Computer Communications (IEEE INFOCOM)*, Hong Kong, China, April 2015, pages 1957-1965, DOI: 10.1109/INFOCOM.2015.7218579.

33. [**ICNP'14**] Saiyu Qi, **Yuanqing Zheng**, Mo Li, Yunhao Liu, Jinli Qiu, "Scalable Data Access Control in RFID-Enabled Supply Chain", *The 22nd IEEE International Conference on Network Protocols (IEEE ICNP)*, The Research Triangle, North Carolina, USA, October 2014, pages 71-82, DOI: 10.1109/ICNP.2014.28.

34. [**MobiCom'14**] **Yuanqing Zheng**, Guobin Shen, Liqun Li, Chunshui Zhao, Mo Li, Feng Zhao, "Travi-Navi: Self-deployable Indoor Navigation System", *The 20th Annual International Conference on Mobile Computing and Networking (ACM MobiCom)*, Maui, Hawaii, USA, September 2014, pages 471-482, DOI: 10.1145/2639108.2639124.

35. [**INFOCOM'14**] **Yuanqing Zheng**, Mo Li, "Read Bulk Data from Computational RFIDs", *The 33rd IEEE International Conference on Computer Communications (IEEE INFOCOM)*, Toronto, Canada, 2014, pages 495-503, DOI: 10.1109/INFOCOM.2014.6847973.

36. [**INFOCOM'14**] Jiajue Ou, **Yuanqing Zheng**, Mo Li, "MISC: Merging Incorrect Symbols using Constellation Diversity for 802.11 Retransmission", *The 33rd IEEE International Conference on Computer Communications (IEEE INFOCOM)*, Toronto, Canada, 2014, pages 2472-2480, DOI: 10.1109/INFOCOM.2014.6848193.

37. [**INFOCOM'14**] Saiyu Qi, **Yuanqing Zheng**, Mo Li, Li Lu, Yunhao Liu, "COLLECTOR: A Secure RFID-Enabled Batch Recall Protocol", *The 33rd IEEE International Conference on Computer Communications (IEEE INFOCOM)*, Toronto, Canada, 2014, pages 1510-1518, DOI: 10.1109/INFOCOM.2014.6848086.

38. [**INFOCOM'13**] **Yuanqing Zheng**, Mo Li, "P-MTI: Physical-layer Missing Tag Identification via Compressive Sensing", *The 32nd IEEE International Conference on Computer Communications (IEEE INFOCOM)*, Turin, Italy, 2013, pages 917-925, DOI: 10.1109/INFCOM.2013.6566880.

39. [**INFOCOM'13**] **Yuanqing Zheng**, Mo Li, "ZOE: Fast Cardinality Estimation for Large-Scale RFID Systems", *The 32nd IEEE International Conference on Computer Communications (IEEE INFOCOM)*, Turin, Italy, 2013, pages 908-916, DOI: 10.1109/INFCOM.2013.6566879.

40. [**SenSys'12**] Pengfei Zhou, **Yuanqing Zheng**, Zhenjiang Li, Mo Li, Guobin Shen, "IODetector: A Generic Service for Indoor Outdoor Detection", *The 10th ACM Conference on Embedded Networked Sensor Systems (ACM SenSys)*, Toronto, Canada, Nov. 2012, pages 113-126, DOI: 10.1145/2426656.2426668, (**Test of Time Award in ACM SenSys 2022**).

41. [**MobiSys'12**] Pengfei Zhou, **Yuanqing Zheng**, Mo Li, "How Long to Wait?: Predicting Bus Arrival Time with Mobile Phone based Participatory Sensing", *The 10th ACM International Conference on Mobile Systems, Applications and Services (ACM MobiSys)*, Low Wood Bay, United Kingdom, Jun. 2012, pages 379-392, DOI: 10.1145/2307636.2307671.

42. [**ICNP'11**] **Yuanqing Zheng**, Mo Li, "Fast Tag Searching Protocol for Large-Scale RFID Systems", *The 19th IEEE International Conference on Network Protocols (IEEE ICNP)*, Vancouver, Canada, Oct 2011, pages 363-372, DOI: 10.1109/ICNP.2011.6089075.

43. **[ICDCS'11]** **Yuanqing Zheng**, Mo Li, Chen Qian, "PET: Probabilistic Estimating Tree for Large-Scale RFID Estimation", *The 31st IEEE International Conference on Distributed Computing Systems (IEEE ICDCS)*, Minneapolis, Minnesota, USA, Jun 2011, pages 37-46, DOI: 10.1109/ICDCS.2011.9.

Refereed Journal Publications

44. **[TSDC]** Qiang Yang, Kaiyan Cui, **Yuanqing Zheng**, "Room-scale Voice Liveness Detection for Smart Devices", *IEEE Transactions on Dependable and Secure Computing*, accepted for publication.

45. **[TON]** Ningning Hou, Xianjin Xia, Yifeng Wang, **Yuanqing Zheng**, "One Shot for All: Quick and Accurate Data Aggregation for LPWANs", *IEEE/ACM Transactions on Networking*, accepted for publication.

46. **[TCOM]** Xintao Huan, Wen Chen, Tianli Wang, Han Hu, **Yuanqing Zheng**, "A One-Way Time Synchronization Scheme for Practical Energy-Efficient LoRa Network Based on Reverse Asymmetric Framework", *IEEE Transactions on Communications*, DOI: 10.1109/TCOMM.2023.3305515, accepted for publication.

47. **[TMC]** Weiye Xu, Jianwei Liu, Shimin Zhang, **Yuanqing Zheng**, Feng Lin, Fu Xiao, Jinsong Han, "Anti-Spoofing Facial Authentication Based on COTS RFID", *IEEE Transactions on Mobile Computing*, DOI: 10.1109/TMC.2023.3289708, accepted for publication.

48. **[TMC]** Tianben Wang, Zhishen Wang, Xiantao Liu, Wenbo Liu, Leye Wang, **Yuanqing Zheng**, Jin Hu, Tao Gu, Daqing Zhang, "OmniResMonitor: Omnimonitoring of Human Respiration using Acoustic Multipath Reflection", *IEEE Transactions on Mobile Computing*, DOI: 10.1109/TMC.2023.3281928, accepted for publication.

49. **[TOSN]** Ningning Hou, Xianjin Xia, **Yuanqing Zheng**, "Jamming of LoRa PHY and Countermeasure", *ACM Transactions on Sensor Networks*, https://doi.org/10.1145/3583137, accepted for publication.

50. **[TMC]** Qiang Yang, **Yuanqing Zheng**, "DeepEar: Sound Localization with Binaural Microphones", *IEEE Transactions on Mobile Computing*, accepted for publication.

51. **[TON]** Ningning Hou, Xianjin Xia, **Yuanqing Zheng**, "CloakLoRa: A Covert Channel over LoRa PHY", *IEEE/ACM Transactions on Networking*, accepted for publication

52. **[TOSN]** Ningning Hou, Xianjin Xia, **Yuanqing Zheng**, "Don't Miss Weak Packets: Boosting LoRa Reception with Antenna Diversities", *ACM Transactions on Sensor Networks*, accepted for publication

53. **[TOSN]** Xianjin Xia, Ningning Hou, **Yuanqing Zheng**, Tao Gu, "PCube: Scaling LoRa Concurrent Transmissions with Reception Diversities", *ACM Transactions on Sensor Networks* – Special Issue on Low Power Wide Area Networks, accepted for publication, DOI: doi.org/10.1145/3545571

54. **[TDSC]** Shang Gao, Zhe Peng, Feng Tan, **Yuanqing Zheng**, and Bin Xiao, "SymmeProof: Compact Zero-Knowledge Argument for Blockchain Confidential Transactions", *IEEE Transactions on Dependable and Secure Computing*, accepted for publication, DOI: 10.1109/TDSC.2022.3179913

55. **[TOSN]** Saiyu Qi, Wei Wei, Jingxian Cheng, **Yuanqing Zheng**, Zhou Su, Jingning Zhang, Yong Qi, "Secure and Efficient Item Traceability for Cloud-Aided IIoT", *ACM Transactions on Sensor Networks*, 05 May 2022, doi.org/10.1145/3522740.

56. **[TITS]** Youshui Lu, Jingning Zhang, Yong Qi, Saiyu Qi, **Yuanqing Zheng**, Yuhao Liu, Hongyu Song, Wei Wei, "Accelerating at the Edge: A Storage-Elastic Blockchain for Latency-Sensitive Vehicular Edge Computing", *IEEE Transactions on Intelligent Transportation Systems*, 10 September 2021, DOI: 10.1109/TITS.2021.3108052.

57. **[TON]** Xianjin Xia, **Yuanqing Zheng**, Tao Gu, "LiteNap: Downclocking LoRa Reception", *IEEE/ACM Transactions on Networking*, DOI: 10.1109/TNET.2021.3096990.

58. **[TMC]** Kaiyan Cui, Yanwen Wang, **Yuanqing Zheng**, Jinsong Han, "ShakeReader: 'Read' UHF RFID using Smartphone", *IEEE Transactions on Mobile Computing*, accepted for publication.

59. **[IoTJ]** Yanwen Wang, Jiannong Cao, **Yuanqing Zheng**, "Towards A Low-cost Software-Defined UHF RFID System for Distributed Parallel Sensing", *IEEE Internet of Things Journal*, preprint available online. DOI: 10.1109/JIOT.2021.3067379.

60. **[TMC]** Yanwen Wang, Jiaxing Shen, **Yuanqing Zheng**, "Push the Limit of Acoustic Gesture Recognition", *IEEE Transactions on Mobile Computing*, preprint available online. DOI: 10.1109/TMC.2020.3032278. (Fast Tracked to IEEE TMC as the Best Paper Award recipient in IEEE INFOCOM 2020).

61. **[TDSC]** Saiyu Qi, **Yuanqing Zheng**, Yue Li, Xiaofeng Chen, Jianfeng Ma, Dongyi Yang, Yong Qi, "DE-Sword: Incentivized Verifiable Tag Path Query in RFID-enabled Supply Chain Systems", *IEEE Transactions on Dependable and Secure Computing*, preprint available online.

62. **[TDSC]** Saiyu Qi, **Yuanqing Zheng**, Xiaofeng Chen, Wei Wei, "Ants can Carry Cheese: Secure and Private RFID-Enabled Third-Party Distribution", *IEEE Transactions on Dependable and Secure Computing*, preprint available online. DOI: 10.1109/TDSC.2020.3026191.

63. **[TON]** Xianjin Xia, **Yuanqing Zheng**, Tao Gu, "FTrack: Parallel Decoding for LoRa Transmissions", *IEEE/ACM Transactions on Networking*, volume 28, issue 6, pages 2573-2586, DOI: 10.1109/TNET.2020.3018020.

64. [**TII**] Saiyu Qi, Youshui Lu, **Yuanqing Zheng**, Yumo Li, Xiaofeng Chen, "Cpds: Enabling Compressed and Private Data Sharing for Industrial IoT over Blockchain", *IEEE Transactions on Industrial Informatics* (Early Access), Date of Publication: 28 May 2020, DOI: 10.1109/TII.2020.2998166.

65. [**TMC**] Yanwen Wang, **Yuanqing Zheng**, "TagBreathe: Monitor Breathing with Commodity RFID Systems", *IEEE Transactions on Mobile Computing*, volume 19, issue 4, pages 969-981, 25 February 2019, DOI: 10.1109/TMC.2019.2900214.

66. [**TDSC**] Saiyu Qi, **Yuanqing Zheng**, "Crypt-DAC: Cryptographically Enforced Dynamic Access Control in the Cloud", *IEEE Transactions on Dependable and Secure Computing* (Early Access), 29 March 2019, DOI: 10.1109/TDSC.2019.2908164.

67. [**TON**] Xianjin Xia, Shining Li, Yu Zhang, Bingqi Li, **Yuanqing Zheng**, Tao Gu, "Enabling Out-of-Band Coordination of Wi-Fi Communications on Smartphones", *IEEE/ACM Transactions on Networking*, Volume: 27, Issue: 2, April 2019, Date of Publication: 06 March 2019, DOI: 10.1109/TNET.2019.2891263.

68. [**IoTJ**] Tianben Wang, Daqing Zhang, Leye Wang, **Yuanqing Zheng**, Tao Gu, Bernadette Dorizzi, Xingshe Zhou, "Contactless Respiration Monitoring Using Ultrasound Signal With Off-the-Shelf Audio Devices", *IEEE Internet of Things Journal*, Volume: 6, Issue: 2, April 2019, Date of Publication: 23 October 2018, DOI: 10.1109/JIOT.2018.2877607.

69. [**IEEE Wireless Communications**] Dapeng Wu, Zhenjiang Li, Jianping Wu, **Yuanqing Zheng**, Mo Li, Qiuyuan Huang, "Vision and Challenges for Knowledge Centric Networking", *IEEE Wireless Communications* (Early Access), 11 April 2019, DOI: 10.1109/MWC.2019.1800323.

70. [**TON**] Yuxiao Hou, Yuanqing Zheng, "PHY-Tree: Physical Layer Tree-Based RFID Identification", *IEEE/ACM Transactions on Networking*, Volume: 26, Issue: 2, pages 711-723, 31 January 2018, DOI: 10.1109/TNET.2018.2791938.

71. [**TON**] **Yuanqing Zheng**, Guobin Shen, Liqun Li, Chunshui Zhao, Feng Zhao, "Travi-Navi: Self-Deployable Indoor Navigation System", *IEEE/ACM Transactions on Networking*, Volume: 25, Issue: 5, pages 2655 - 2669, 09 June 2017, DOI: 10.1109/TNET.2017.2707101.

72. [**TON**] Jiajue Ou, Mo Li, **Yuanqing Zheng**, "Come and Be Served: Parallel Decoding for COTS RFID Tags", *IEEE/ACM Transactions on Networking*, Volume: 25, Issue: 3, pages 1569 - 1581, 16 January 2017, DOI: 10.1109/TNET.2016.2645232.

73. [**TON**] Saiyu Qi, **Yuanqing Zheng**, Mo Li, Yunhao Liu, Jinli Qin, "Scalable Industry Data Access Control in RFID-Enabled Supply Chain", *IEEE/ACM Transactions on Networking*, Volume: PP, Issue: 99, pages 1-14, 25 March 2016, DOI: 10.1109/TNET.2016.2536626.

74. [**TON**] Zhenjiang Li, Wan Du, **Yuanqing Zheng**, Mo Li, Dapeng Oliver Wu, "From Rateless to Hopless", *IEEE/ACM Transactions on Networking*, Volume: PP, Issue: 99, pages 1-14, 18 March 2016, DOI: 10.1109/TNET.2016.2561304.

75. [**TC**] Saiyu Qi, **Yuanqing Zheng**, Mo Li, Li Lu, Yunhao Liu, "Secure and Private RFID-Enabled Third-Party Supply Chain Systems", *IEEE Transactions on Computers*, Volume: PP, Issue: 99, pages 1-14, 04 March 2016, DOI: 10.1109/TC.2016.2538260.

76. [**WINET**] Yuxiao Hou, **Yuanqing Zheng**, Mo Li, "Fair QoS multi-resource allocation for uplink traffic in WLAN", *Wireless Networks*, pages 1-20, 28 December 2015, DOI: 10.1007/s11276-015-1170-2.

77. [**TON**] **Yuanqing Zheng**, Mo Li, "Read Bulk Data from Computational RFIDs", *IEEE/ACM Transactions on Networking*, Volume: PP, Issue: 99, pages 1-14, 09 December 2015, DOI: 10.1109/TNET.2015.2502979.

78. [**TON**] Yuxiao Hou, Jiajue Ou, **Yuanqing Zheng**, Mo Li, "PLACE: Physical Layer Cardinality Estimation for Large-Scale RFID Systems", *IEEE/ACM Transactions on Networking*, Volume: PP, Issue: 99, pages 1-13, 14 October 2015, DOI: 10.1109/TNET.2015.2481999.

79. [**TON**] **Yuanqing Zheng**, Mo Li, "P-MTI: Physical-layer Missing Tag Identification via Compressive Sensing", *IEEE/ACM Transactions on Networking*, Volume: 23, Issue: 4, pages 1356-1366, August 2015, 10.1109/TNET.2014.2326460.

80. [**TON**] **Yuanqing Zheng**, Mo Li, "Towards More Efficient Cardinality Estimation for Large-Scale RFID Systems", *IEEE/ACM Transactions on Networking*, Volume: 22, Issue: 6, pages 1886-1896, December 2014, DOI: 10.1109/TNET.2013.2288352.

81. [**TON**] **Yuanqing Zheng**, Mo Li, "Fast Tag Searching Protocol for Large-Scale RFID Systems", *IEEE/ACM Transactions on Networking*, Volume: 21, Issue: 3, pages 924-934, June 2013, DOI: 10.1109/TNET.2012.2212454.

82. [**TMC**] **Yuanqing Zheng**, Mo Li, "PET: Probabilistic Estimating Tree for Large-Scale RFID Estimation", *IEEE Transactions on Mobile Computing*, Volume: 11, Issue: 11, pages 1763-1774, November 2012, DOI: 10.1109/TMC.2011.238.

83. [**TMC**] Pengfei Zhou, **Yuanqing Zheng**, Mo Li, "How Long to Wait?: Predicting Bus Arrival Time with Mobile Phone based Participatory Sensing", *IEEE Transactions on Mobile Computing*, Volume: 13, Issue: 6, June 2014, DOI: 10.1109/TMC.2013.136.

84. [**TOSN**] Mo Li, Pengfei Zhou, **Yuanqing Zheng**, Zhenjiang Li, and Guobin (Jacky) Shen, "IODetector: A Generic Service for Indoor Outdoor Detection", *ACM Transactions on Sensor Network*, Volume: 11, Issue: 2, pages 1-29, February 2015, DOI: 10.1145/2659466.

Selected Projects and Grants

- "Integrated Sensing and Communication for Large-scale LoRa Networks", GRF, 01/09/2023 – 31/08/2026 (3 Years), HKD1,529,247, **PI**.
- "Future AIoT Network Connections Network Connectivity as a Service for Heterogeneous AIoT Infrastructure", Projects of RIAIoT, 01/07/2022 – 30/06/2024 (2 Years), HKD1,000,000, **PI**.
- "Towards A Scalable and Secure LPWAN: A Collaborative Edge Computing Framework", GRF, PolyU 152165/19E, 01/09/2019 – 31/08/2022 (3 Years), HKD518,999, **PI**.
- "RFID Cross-layer Optimization and Testbed Development", NSFC, 1/1/2018 – 31/12/2020 (3 Years), RMB280,000, **PI**.
- "Design, Analysis, and Implementation of Efficient RFID Protocols", ECS, PolyU 252053/15E, 01/01/2016 – 31/12/2018 (3 Years), HKD776,075, **PI**.
- "Touch-free Human Computer Interaction to Reduce the COVID-19 Spreading via Touchscreens in Public Areas", Departmental GRF, 02/07/2021 – 01/07/2023 (2 Years), HKD700,000, **PI**.
- "Cyber Security and Privacy (CSP) Group: mmWave-based People Tracking and Monitoring in the Dark", Internal Grant, 02/08/2021 – 01/08/2022 (1 Year), HKD100,000, **PI**.
- "Power Scheduling and Sensor Fusion Framework for Passive RFID Sensors", Internal Grant, G-YBXX, 02/11/2017 – 31/12/2019 (2 Years). HKD105,000. **PI**.
- "Perpetual Sensing and Physical Analytics with Powerless RFID Sensors", Internal Grant, G-YBMT, 01/01/2017 – 31/12/2018 (2 Years), HKD150,000, **PI**.
- "Developing and testing a brief mindfulness just-in-time adaptive intervention for reducing stress of dementia caregivers", HMRF, 01/08/2023 – 31/07/2025 (2 Years), HKD1,479,400, Co-PI.
- "Enabling Bulk Data Transfers for Low-Power Wide-Area Networks", GRF, PolyU 15218022, 01/01/2023 – 31/12/2025 (3 Years), HKD1,086,185, Co-PI.
- "Boosting the Security and Safety of Autonomous Vehicles", Department Impactful Research Fund, 01/07/2022 – 30/06/2024 (2 Years), HKD1,999,000, Co-PI.
- "Cyber Security and Privacy (CSP) Group", One-line Budget, 15/06/2020 – 14/09/2021 (1.5 Years), HKD600,000, Co-PI.
- "Location Analytics and Indoor Floorplan Reconstruction", Department GRF, 4-ZZFF, 02/10/2016 – 01/10/2018 (2 Years), HKD1,000,000, Co-PI.

Department Administration Service

- Department Staffing Committee Member (DSC) (2023-2024)
- Department Research Committee Member (DRC) (2016-2017, 2021-2024)
- Programme Leader of EIS Stream, DLTC member (2023-2024)
- Capstone Project Coordinator, DUPT member (2018-2024)
- Club director: Ug Researchers' Club of Challengers Program (2017/2018).

Academic Community Service

Transaction and Journal Editorial Board Member:

- Editorial Board Member: IEEE Transactions on Wireless Communications (TWC) (2021/01 -)
- Editorial Board Member: Computer Networks (2023/01 -)
- Editorial Board Member: Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) (2023/01 -)
- Editorial Board Member: ACM Transactions on Sensor Networks (TOSN) (2023/09 -)
- Guest Editor: ACM Transactions on Sensor Networks (TOSN), Special Issue on Low Power Wide Area Networks, 2022

Conference Organization Chair:

- Demonstration and Poster Co-Chairs: IEEE International Conference on Distributed Computing Systems (ICDCS'22)
- Publication Co-Chairs: 2022 ACM/IEEE Conference on Internet of Things Design and Implementation (IoTDI'22)
- Publication Co-Chairs: 2019 International Conference on Embedded Wireless Systems and Networks (EWSN'19)
- Web Chair: 2016 International Conference on Information Processing in Sensor Networks (IPSN'16)
- Publication Chair: 2015 International Conference on Orange Technologies (ICOT'15)

Technical Program Committee Member:

- TPC Track co-Chair: Wireless Sensing and Mobile Computing Track, IEEE ICPADS 2022

- TPC Track co-Chair: Systems and Applications Track, IEEE MASS 2021
- INFOCOM 2016-2024: The Annual IEEE International Conference on Computer Communications
- ACM SenSys 2017 (External Review Committee), 2021-2022: The ACM Conference on Embedded Networked Sensor Systems
- IoTDI 2021-2024: The ACM/IEEE Conference on Internet of Things Design and Implementation
- EWSN 2019-2023: The International Conference on Embedded Wireless Systems and Networks
- ICPADS 2016-2020, 2022: The IEEE International Conference on Parallel and Distributed Systems
- MASS 2020-2021: The 16th IEEE International Conference on Mobile Ad-Hoc and Smart Systems
- IEEE ICDCS 2018: The IEEE International Conference on Distributed Computing
- SECON 2018: The IEEE International Conference on Sensing, Communication and Networking
- ICCCN 2019, 2022: The International Conference on Computer Communications and Networks
- MobiQuitous 2022: EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services

PROFESSIONAL COMMUNITY SERVICE

Panel Member:

- 11 Nov 2020 – 22 Jan 2021: Hong Kong Council for Accreditation of Academic & Vocational Qualifications. Programme re-accreditation for BA (Hons) in Applied and Human-Centred Computing, and BA (Hons) in Convergent Media and Communication Technology
- 27 Apr 2021 – 27 Aug 2021: Hong Kong Council for Accreditation of Academic & Vocational Qualifications. Programme Accreditation for local Higher Diploma programmes (Level 4) on Applied Intelligent Technologies.
- 21 July 2021 – 19 Nov 2021: Hong Kong Council for Accreditation of Academic & Vocational Qualifications. Learning Programme Accreditation (LPA) for the BSc Computing Programme
- 7 August 2022 – 28 October 2022: Hong Kong Council for Accreditation of Academic & Vocational Qualifications. Learning Programme Re-accreditation (re-LPA) for non-Local Programmes: BSc (Hons) Cyber Security

Specialist:

- 08 Dec 2022 - 31 Dec 2024: Hong Kong Council for Accreditation of Academic & Vocational Qualifications

ADVISEES

Current Students:

- Leming Shen (PhD student, 2022-)
  B.S. in Computer Science, Zhejiang University, July 2022.
- Shiming Yu (PhD student, 2022-)
  B.E. in Communication Engineering, University of Electronic Science and Technology of China, July 2022.

Alumni:

- Yanwen WANG (Doctorate in 2019)
  First Job (2020): Associate Professor in Hunan University, China
  Ph.D. in Computer Science, The Hong Kong Polytechnic University
  M.S. in EE, Missouri University of Science and Technology, USA, May 2013.
  B.E. in EIE, Human University, China, June 2010.
- Ningning Hou (Doctorate in 2021)
  First Job (2023): Lecturer, Macquarie University, Australia
  Ph.D. in Computer Science, The Hong Kong Polytechnic University
  B.E. in Engineering in Telecommunication, Beijing University of Posts and Telecommunications, Beijing China, July 2017.
- Kaiyan Cui (Doctorate in 2022, dual degree program with Xi'an Jiaotong U)
  Ph.D. in Computer Science, The Hong Kong Polytechnic University
  M.S./Ph.D. in Software Engineering, Xi'an Jiaotong University, September 2016 – Present.
  B.S. in Computer Science and Technology, Taiyuan University of Technology, Taiyuan, China, 2016.
- Qiang Yang (Doctorate in 2022)
  Ph.D. in Computer Science, The Hong Kong Polytechnic University
  M.S. in Computer Science and Technology, Shenzhen University, China, 2019.
  B.S. in Computer Science and Technology, Henan University, China, 2016.
- Xianjin Xia (Postdoc Fellow, 2018-2021)
  First Job (2021): Research Assistant Professor in HK PolyU
  Ph.D. in Computer Science, Northwestern Polytechnical University, Xi'an, China, 2018.
  M.S. in Computer Science, Northwestern Polytechnical University, Xi'an, China, 2013.
  B.S. in Software Engineering, Northwestern Polytechnical University, Xi'an, China, 2010.

- Junhao SHOU (Research Assistant, 2018-2019)
  First Job: Software Engineer at AWS
  M.S. in CMU,
  B.E. in Electronic and Information Engineering, the Hong Kong Polytechnic University, Hong Kong, August 2017.
- Lap Hou LAO (Research Assistant, 2018-2019)
  PhD Student in PolyU
  M.Sc. in Information Technology, the Hong Kong Polytechnic University, Hong Kong, 2018.
  B.Sc. in Computer Engineering (First Honors), the Open University of Hong Kong, 2016.