QUTAIBAH MALLUHI

Professor, Computer Science and Engineering
Qatar University

P.O.Box 2713
Doha, Qatar
Email: *qmalluhi@qu.edu.qa*

Phone: (+974) 5519-8541
(+974) 4403-4243
Fax: (+974) 4403-4241

EDUCATION

- Ph.D. (Computer Science), 1994
  Center for Advanced Computer Studies (CACS), University of Louisiana
  Lafayette, LA. (GPA: 4.0)
- M.S. (Computer Science), 1993
  CACS, University of Louisiana
  Lafayette, LA. (GPA: 4.0)
- M.S. (Computer Science & Engineering), 1990
  King Fahd University of Petroleum & Minerals (KFUPM)
  Dhahran, Saudi Arabia. (GPA: 4.0)
- B.S. (Computer Science and Engineering), 1988
  KFUPM, Dhahran, Saudi Arabia. (First Honors, GPA: 3.83)

PROFESSIONAL EXPERIENCE

- Professor/Department Head (Since September-2005/during July 2006- Aug 2012)
  Computer Science and Engineering, Qatar University, Doha, Qatar
- Director (September 2012-August 2016)
  KINDI Center for Computing Research, Qatar University, Doha, Qatar
- Co-Founder and Executive Advisor (December 2008-October 2009)
  Qatar Mobility Innovation Center at the Qatar Science and Technology Park
- Founder and Chief Technology Officer (January 2002-August 2005)
  Acting Chief Executive Officer (November 2003-October 2004)
  Data Reliability Inc., Jackson, MS.
- Asst/Assoc/full Professor (August 1994-August 2005)
  Computer Science, Jackson State
  Jackson, MS
- Consultant, Network Design (1999-2000)
  Unitel Corp., Jackson, MS
- Consultant, Internet Systems (2000-2002)
  Orblink Inc., Jackson, MS
- Research Faculty (May 95-August 95, May 96-August 96)
  Lawrence Berkeley National Laboratory (LBNL), Berkeley, CA.
- Research Assistant (August 91-July 94)

CACS, University of SW Louisiana, Lafayette, LA.

- Part-time Instructor (January 91-August 91)
  Computer Science Department, USL, Lafayette, LA.
- Teaching and Research Assistant (August 88-August 90)
  KFUPM, Dhahran, Saudi Arabia.
- Assistant Engineer (May 88-June 88)
  McCormack & Dodge, Dhahran, Saudi Arabia.

RESEARCH INTRESTS

Cyber security, secure computation, cloud computing, and distributed data storage and management,

FUNDED RESEARCH

- "Multi-layer Cybersecurity and Situational Awareness to Enhance Resiliency in Qatar's Power Grid," Lead PI, National Priorities Research Program-Cluster (NPRP-C), Qatar national Research Fund (QNRF), 2020-2024, $470,000.
- "Qaution: Privacy-Preserving Crowdsourcing for Outbreak Management and Self Protection in Qatar," Concept Development-Emergency Response Grant, Qatar University, 2020-2021, $13,200.
- "The Garbled Computer: Towards Computing without Seeing (Phase II)," Lead PI, Exceptional National Priorities Research Program (NPRP-EP), Qatar National Research Fund (QNRF), 2018-2020, $1,000,000.
- "Efficiently Reliable and Privacy Preserving Cloud Data Storage," Lead PI, National Priorities Research Program (NPRP), Qatar National Research Fund (QNRF), 2016-2020, $810,000.
- "How to Attack a Disconnected Computer," Primary Research mentor, Undergraduate Research Experience Program (UREP), Qatar National Research Fund (QNRF), 2020-2021, $13,890.
- "Securing Biometrics Using Intel's SGX Enclave Technology," Primary Research Mentor, Undergraduate Research Experience Program (UREP), Qatar National Research Fund (QNRF), 2018-2019, $14,300.
- "The Garbled Computer: Towards Computing without Seeing (Phase I)," Lead PI, Exceptional National Priorities Research Program (NPRP-EP), Qatar National Research Fund (QNRF), 2015-2017, $1,750,000.
- "Introduction to Cyber Security MOOC in Arabic," PI, UK Foreign & Commonwealth Office, 2015-2016, £17,550.
- "Scientific Data Management in the Cloud," Lead PI, National Priorities Research Program (NPRP), Qatar National Research Fund (QNRF), 2012- 2015, $1,030,000.
- "BioCloud: Algorithms, Tools and Infrastructure for High-Performance Next-Generation Bioinformatics on the Cloud," Co-Lead PI, National Priorities Research Program (NPRP), Qatar National Research Fund (QNRF), April 2012-March 2015, $1,000,000.
- "Trusted Computation-Intensive Services in Cloud Computing Environments," Lead PI, National Priorities Research Program (NPRP), Qatar National Research Fund (QNRF), December 2010-Nov 2013, $1,015,000.

- “Managing Private Data in the Cloud,” Co-Lead PI, NPRP, QNRF, December 2010-Nov 2013, $1,048,000.
- “Qloud: Towards a Cloud Computing Infrastructure in Qatar to Target Regional Scientific Applications,” Co-PI, NPRP, QNRF, December 2010-Nov 2013, $1,000,000.
- “Cloud Computing for Efficient Analysis of Historical Data Repositories of Oil and Gas Production Systems,” QNRF, Qatar, February 2010, $27,400.
- “Cloud Computing for Efficient Analysis of Oil and Gas Production Data,” IBM Faculty Award, September 2009, $12,000.
- “Building the QU Cloud Computing Infrastructure,” Qatar University, June 2009-March 2010, $60,000.00.
- “A Distributed System for Vehicle Tracking and Real-Time Doha Traffic Surveillance,” Qatar University, February-July 2008, QR 21,800.
- “A System for Automatic Gathering and Intelligent Analyses of Doha Traffic Data”, QNRF, Qatar, February-October 2007, $37,760.
- “Automatic Doha Traffic Data Collection and Analysis,” Qatar University, September 2005-June 2006, QR 11,900.
- “Content-Based File Systems for Intelligent Management of News Articles,” Qatar University, September 2005-September 2007, QR 117,400.
- “Vehicle Tracking Using GPS systems and the GSM network,” Qatar University, September 2005-June 2006, QR 6,873.
- “Intelligent Information Management in Data-Intensive HPC Environments Using Content-Based File Systems,” US DoD/ERDC, Vicksburg, MS, August 05-August 06, $147,257.
- “Scalable and Reliable Storage Infrastructure for Server Farms,” NSF, Project Director, January 2005-December 2007, $500,000.
- “Vertical Integration for Missile Defense Surveillance Data,” Senior Personnel, US Army Space and Missile Defense Command, August 2004-July 2005.
- “NSM on DAFS over InfiniBand: Design, Implementation, and Assessment,” HPCVI/ERDC/DoD, July 2004-July 2005, $195,723.
- “Scalable and Reliable Storage Infrastructure for Web Server Farms,” NSF, Project Director, January 2004-June 2004, $100,000.
- “NSF Research Experiences for Undergraduates, Distributed Storage Security,” NSF, March 2004-February 2005, $12,000.
- SBIR Phase 0, MS-FAST, May 2004-June 2004, $3,000.
- “SBIR Phase II: Group Coding for Reliable High Performance Network-Centric Storage,” NSF, Feb 2003-Feb 2005, $494,000.
- “SBIR Phase I: Group Coding for Reliable High Performance Network-Centric Storage,” NSF, January 2002-June 2002, $100,000.
- "High Performance Secure 3D Visualization Application,” HPCVI Project, June-May 2004, $91,587.
- "Dynamic Visualization & Management of Distributed Storage Resources,” HPCVI Project, June-May 2004, $99,719.

- "Network Storage Management in the Data Grid Environment," NASA ARC, November 2001-2003, $222,000.
- "3D Network Visualization," NASA ARC, March 2001-2002, $35,000.
- "Distributed Storage for Video on Demand Application," DOD High Performance Visualization Center Initiative, September 2001-2002, $151,781.
- "High Performance Network-Based Storage Management and File Sharing in the DOD HPC environment," DOD High Performance Visualization Center Initiative, September 1999-2002, ($336,056 + $198,486 + $209,629).
- "Critical Review of Computer-based Distance Education and Distance Lab Environment Technologies," DOD High Performance Visualization Center Initiative, Co-PIs: Q. M. Malluhi, September 1999-2001, ($168,796 + $162,681).
- "High Performance Management of Distributed Data," SBIR Phase 0, NSF, March 2000-2001, $3,000.
- "Enabling Technology for Building High Performance Distributed Information Storage and Retrieval Systems," DOE, Co-PIs: G. Jung and Q. M. Malluhi, September 1997-1999, $320,000.
- "Distributed Storage for High Performance I/O," Raytheon E-Systems/DoD Modernization Program, PD: W. Brown, Co-PIs: G. Jung, and Q. M. Malluhi, May 1997–1999, $224,000.
- "Distributed Storage for High Performance I/O," Nicholes Research Grant/DoD Modernization Program, PD: W. Brown, Co-PIs: G. Jung, and Q. M. Malluhi, August 1997-1999, $150,000.
- "Implementation of a Reliable High-Performance Distributed Parallel Storage System," LBNL, December 1996 – November 1997, $38,633.
- "Coding Techniques for Reliability and Security of the Image Server System," LBNL, September 1995–1996, $65,315.
- "Parallel Implementation of AI Algorithms," LBL/JSU/AGMUS Science Consortium/DOE, Co-PIs: Q. M. Malluhi and D. Mitra, September 1995 – May 1996, $23,400.

HONORS & AWARDS

- First Place Team, Dell EMC Envision the Future, Graduation Project Competition for Turkey, Middle East and Africa, 2018.
- Best paper award, International Conf. on Similarity Search and Applications - SISAP 2014.
- Best paper award, DBSec 2013.
- First prize, Best UREP Project Competition, Qatar National Research Fund, March 2010.
- Qatar University Research Excellence Award, September 2007.
- Best Proposal, Undergraduate Research Experiences Program, Cycle 1, Qatar National Research Fund, Doha, Qatar, April 2007.
- JSU Technology Transfer and Entrepreneurship Award, October 2004.
- MURA (Mississippi University Research Authority) authorization to establish material financial interest in a private entity, Mississippi Board of Trustees of State Institutions of Higher Learning, 2003.
- JSU CSC Department Excellence Award, 2001

- Member of the Honor Society of Phi Kappa Phi.
- Awarded the King Faisal Foundation Scholarship for graduate studies.
- Recipient of the KFUPM First Honors Trophy, 1988, and the recipient of KFUPM First Honors Award (9 times).

OTHER PROFESSIONAL ACTIVITIES (Partial List)

- ABET Program Evaluator, ABET, Inc., the recognized accreditation organization for college and university programs in applied science, computing, engineering, and technology, since June 2008.
- Member, Institutional Accreditation Committee (WSCUC accreditation), Qatar University, 2021.
- Chair, Secure Computing Workshop, Grand Hyatt, Doha, Qatar, February 5, 2020.
- Member, organizing committee, IEEE International Conference on Informatics, IoT and Enabling Technologies (ICIoT'20), February 2020.
- Referee, Qatar University Annual Research Forum, 2020 and 2021.
- Consultant/external academic program evaluator, Sultan Qaboos University, 2012 and 2019.
- Member, Institutional Strategic Planning Team, Qatar University, 2017.
- Judge and mentor, Challenge 22 Competition, Supreme Committee for Delivery & Legacy, Qatar, since 2016.
- Member, Program Committee, 8th IEEE International Workshop on Information Forensics and Security, Abu Dhabi, UAE, December 2016.
- Consultant, Development of the Social Innovation Program, Qatari Diar-Saudi Bin Laden Group (QD-SBG), 2015-2016.
- Editorial board member, International Journal of Secure Software Engineering, 2012-2015.
- Chair, Workshop on "Cloud Computing Security: Towards Computing without Seeing," Doha Qatar, March 2013.
- Judge, Arab Technology Business Plan Competition, Arab Science & Technology Foundation, 2013.
- Member, Advisory Committee, The ACS/IEEE International Conference on Computer Systems and Applications (AICCSA), Morocco, 2013.
- Member, Steering Committee, Aspire Innovation Challenge, 2012.
- Judge, Abdul Hameed Shoman Award for Young Arab Researchers, 2011.
- Co-Founder and Steering Committee Member (January 2009-now), Qloud: Qatar Cloud Computing Center, collaboration between IBM, Qatar University, Carnegie Mellon University-Qatar, and Texas A&M University, Qatar.
- Chair, QU IP Advisory Committee. Responsibilities include the development of intellectual property policies and procedures for Qatar University and the review of IP disclosures, 2009-2010.
- Member, Program Committee of the Undergraduate Conference in Information System, Carnegie Mellon University, Qatar, 2010 and 2011.

- Member, GCC IT Standards Committee, GCC Standardization Organization (GSO), Cooperation Council between the Arab States of the Gulf, 2009.
- Editorial Review Board Member, the International Journal of Secure Software Engineering (IJSSE), Publication of the Information Resources Management Association, IGI-Global, 2012-2017.
- General Chair, *6th ACS/IEEE International Conference on Computer Systems and Applications* (*AICCSA'08*), Doha, Qatar, April 2008.
- Member, University IT Steering Committee, Qatar University. Responsibilities include setting the university IT vision, strategies and policies.
- Chair, Research Policies and Procedures Committee, Qatar University, 2007-08. Responsibilities include review or existing internal research programs and development of new research policies and procedures.
- Organizing Committee, *First Conference for Expatriate Arab Scientists* (*QFIRST 2007*), Doha, Qatar, December 2007.
- Member and Chair, Local Follow-up Committee, Qatar's Arab Expatriate Scientist Initiative, 2006-07, and moderator, Expatriate Arab Scientists Bulletin Board, 2008.
- Editor-in-Chief, *Engineering Journal*, University of Qatar, 2005-2007.
- Moderator and Session Chair, *ICT Education and Human Resource Strategies*, *International Forum of University Presidents*, Daejeon, Korea, October 2006.
- Chair, Research Information and Publications Committee, College of Engineering, Qatar University 2005-06. Responsibilities include management of research grants in the college + reviewing and recommending the funding of university grant proposals.
- Reviewer for:

  IEEE Transactions of Parallel and Distributed Systems
  IEEE Transactions on Computers
  IEEE Transactions on Neural Networks
  IEEE Transactions on Dependable and Secure Computing
  IEEE Cloud Computing
  Journal of Parallel and Distributed Computing
  Journal of Supercomputing
  Data and Knowledge Engineering Journal
  International Conference on Parallel Processing
  International Parallel Processing Symposium
  *IEEE Symposium on Parallel & Distributed Sys*tems
  International Conference on Application Specific Array Processors
  International Conference on Parallel and Distributed Computing Systems
  IEEE International Workshop on Information Forensics and Security (WIFS)
  IEEE Midwest Symposium on Circuits and Systems
  International Conference on Computer Science and Informatics
  Addison Wesley Longman
- Reviewer for the Information Technology SBIR program of the National Science Foundation (NSF), and participate in the NSF panel review for the SBIR program.
- Member, program committee of the *13th International Conference on Parallel and Distributed Computing Systems (PDCS 2000),* Las Vegas, August 2000.

- Member and Chair of numerous university committees. Examples include the Graduate Council, quality assurance, university website, curriculum, graduate programs.
- Member of the organizing committee and of *the 37th IEEE Midwest Symposium on Circuits and Systems*, 1994.
- Judge, Mississippi Science and Engineering Fair, 1998, 1999, 2000 and 2001.
- Judge, Mississippi Science Olympiad, 1999, 2000 and 2001.
- Thesis/project advisor and committee members for over 45 students.
- Research mentor for high-school students (NASA SHARP PLUS Program and Science and Technology Access to Research and Graduate Education (STARGE) High-to-College Bridge program, 2000 & 2001.
- Member, IEEE Computer Society.
- Member, Global Grid Forum.
- Member, American Society of Engineering Education

PUBLICATIONS (Partial List)

1. R AlSaad, Q Malluhi, S Boughorbel. PredictPTB: an interpretable preterm birth prediction model using attention-based recurrent neural networks, *BioData Mining* 15 (1), 1-23, (2022).
2. R AlSaad, Q Malluhi, I Janahi, S Boughorbel. Predicting emergency department utilization among children with asthma using deep learning models, *Healthcare Analytics* 2, 100050, (2022).
3. F Sabry, T Eltaras, W Labda, K Alzoubi, Q Malluhi. Machine Learning for Healthcare Wearable Devices: The Big Picture. *Journal of Healthcare Engineering*, (2022).
4. F Kserawi, S Al-Marri, Q Malluhi, Privacy-Preserving Fog Aggregation of Smart Grid Data Using Dynamic Differentially-Private Data Perturbation. *IEEE Access* 10, 43159-43174, (2022).
5. F Sabry, T Eltaras, W Labda, F Hamza, K Alzoubi, Q Malluhi. Towards on-device dehydration monitoring using machine learning from wearable device's data. *Sensors* 22 (5), 1887, (2022).
6. Usama, M., Malluhi, Q. M., Zakaria, N., Razzak, I. & Iqbal, W. An efficient secure data compression technique based on chaos and adaptive Huffman coding. *Peer-to-Peer Netw. Appl.* **14**, (2021).
7. Selo, O. A., Rachid, M. H., Shikfa, A., Wang, Y. & Malluhi, Q. Private Function Evaluation Using Intel's SGX. *Secur. Commun. Networks* **2020**, (2020).
8. Sabry, F., Labda, W., Erbad, A. & Malluhi, Q. Cryptocurrencies and artificial intelligence: Challenges and opportunities. *IEEE Access* **8**, (2020).
9. Alban, A. Q., Islam, F., Malluhi, Q. M. & Jaoua, A. Anomalies detection in software by conceptual learning from normal executions. *IEEE Access* **8**, (2020).
10. Mingjie, Yu Yongyang, Mahmood Ahmed R., Malluhi Qutaibah M., Ouzzani Mourad, Aref Walid G. LocationSpark: In-memory Distributed Spatial Query Processing and Optimization, *Frontiers in Big Data*, vol. 3, 2020.
11. Mhaisen, N. & Malluhi, Q. M. Data consistency in multi-cloud storage systems with passive servers and non-communicating clients. *IEEE Access* **8**, (2020).
12. Rachid, M. H., Riley, R. & Malluhi, Q. Enclave-based oblivious RAM using Intel's SGX. *Comput. Secur.* **91**, (2020).
13. Kserawi, F. & Malluhi, Q. M. Privacy Preservation of Aggregated Data Using Virtual Battery in the Smart Grid. in *Proceedings - 2020 IEEE 6th International Conference on Dependability in Sensor, Cloud and Big Data Systems and Application, DependSys 2020* (2020). doi:10.1109/DependSys51298.2020.00024.
14. Malluhi, Q., Tran, V. D. & Trinh, V. C. Decentralized broadcast encryption schemes with constant size ciphertext and fast decryption. *Symmetry (Basel).* **12**, (2020).

15. Alsarsour, I., Malluhi, Q. & Wang, Y. Free Chain: Enabling Freedom of Expression through Public Blockchains. in *Proceedings - 2020 IEEE 6th International Conference on Dependability in Sensor, Cloud and Big Data Systems and Application, DependSys 2020* (2020). doi:10.1109/DependSys51298.2020.00014.
16. Wang, Y. & Malluhi, Q. M. The limit of blockchains: Infeasibility of a smart obama-trump contract. *Commun. ACM* **62**, (2019).
17. Wang, Y. & Malluhi, Q. M. *Reusable garbled turing machines without FHE*. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* vol. 11445 LNCS (2019).
18. Nassar, M., Malluhi, Q. & Khan, T. A Scheme for Three-way Secure and Verifiable E-Voting. in *Proceedings of IEEE/ACS International Conference on Computer Systems and Applications, AICCSA* vols 2018-Novem (2019).
19. Tang, M., Yu, Y., Aref, W. G., Malluhi, Q. M. & Ouzzani, M. Efficient parallel skyline query processing for high-dimensional data. in *Proceedings - International Conference on Data Engineering* vols 2019-April (2019).
20. Li, H. *et al.* Breaking HK17 in Practice. in *IEEE International Symposium on Information Theory - Proceedings* vols 2019-July (2019).
21. Tang, M. *et al.* LocationSpark: In-memory distributed spatial query processing and optimization. *arXiv* (2019).
22. Malluhi, Q. M., Shikfa, A., Tran, V. D. & Trinh, V. C. Decentralized ciphertext-policy attribute-based encryption schemes for lightweight devices. *Comput. Commun.* **145**, (2019).
23. Alsaad, R., Malluhi, Q., Janahi, I. & Boughorbel, S. Interpreting patient-Specific risk prediction using contextual decomposition of BiLSTMs: Application to children with asthma. *BMC Med. Inform. Decis. Mak.* **19**, (2019).
24. Sabry, F., Labda, W., Erbad, A., Al Jawaheri, H. & Malluhi, Q. Anonymity and privacy in bitcoin escrow trades. in *Proceedings of the ACM Conference on Computer and Communications Security* (2019). doi:10.1145/3338498.3358639.
25. Senturk, I. F. *et al.* A resource provisioning framework for bioinformatics applications in multi-cloud environments. *Futur. Gener. Comput. Syst.* **78**, (2018).
26. Punekar, M., Malluhi, Q., Desmedt, Y. & Wang, Y. *Computational Aspects of Ideal (t, n)-Threshold Scheme of Chen, Laing, and Martin*. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* vol. 11261 LNCS (2018).
27. Mershad, K. *et al.* AUDIT: approving and tracking updates with dependencies in collaborative databases. *Distrib. Parallel Databases* **36**, (2018).
28. Mershad, K. *et al.* COACT: a query interface language for collaborative databases. *Distrib. Parallel Databases* **36**, (2018).
29. Tang, M., Yu, Y., Aref, W. G., Malluhi, Q. M. & Ouzzani, M. Efficient Parallel Skyline Query Processing for High-Dimensional Data. *IEEE Trans. Knowl. Data Eng.* **30**, (2018).
30. Malluhi, Q. M., Shikfa, A. & Trinh, V. C. A ciphertext-policy attribute-based encryption scheme with optimized ciphertext size and fast decryption. in *ASIA CCS 2017 - Proceedings of the 2017 ACM Asia Conference on Computer and Communications Security* (2017). doi:10.1145/3052973.3052987.
31. Yu, Y. *et al.* In-memory distributed matrix computation processing & optimization. in *Proceedings - International Conference on Data Engineering* (2017). doi:10.1109/ICDE.2017.150.
32. M Nassar, Q Malluhi, M Atallah, A Shikfa, "Securing Aggregate Queries for DNA Databases," *IEEE Transactions on Cloud Computing*, May 2017.
33. Y Wang, QM Malluhi, "Remarks on Quaternions/Octonion Based Diffie-Hellman Key Exchange Protocol Submitted to NIST PQC Project," *ICAR Cryptology ePrint Archive*, 2017
34. Punekar, M., Malluhi, Q., Wang, Y. & Desmedt, Y. Candidate MDS array codes for tolerating three disk failures in RAID-7 architectures. in *BDCAT 2017 - Proceedings of the 4th IEEE/ACM International Conference on Big Data Computing, Applications and Technologies* (2017). doi:10.1145/3148055.3148056.
35. Y Wang, Q Malluhi, "Reducing Garbled Circuit Size While Preserving Circuit Gate Privacy," *ICAR Cryptology ePrint Archive*, 2017

36. Zhang, F., Hwang, K., Khan, S. U. & Malluhi, Q. M. Skyline Discovery and Composition of Multi-Cloud Mashup Services. *IEEE Trans. Serv. Comput.* **9**, (2016).
37. Rachid, M. H. & Malluhi, Q. A scalable solution for finding overlaps between sequences using map-reduce. in *Proceedings of the 8th International Conference on Bioinformatics and Computational Biology, BICOB 2016* (2016).
38. Wang, Y. & Malluhi, Q. M. *Privacy preserving computation in cloud using noise-free fully homomorphic encryption (FHE) schemes*. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* vol. 9878 LNCS (2016).
39. Tang, M. *et al.* Similarity Group-by Operators for Multi-Dimensional Relational Data. *IEEE Trans. Knowl. Data Eng.* **28**, (2016).
40. Malik, S. U. R. *et al.* Performance analysis of data intensive cloud systems based on data management and replication: a survey. *Distrib. Parallel Databases* **34**, (2016).
41. Tang, M. *et al.* Similarity Group-By operators for multi-dimensional relational data. in *2016 IEEE 32nd International Conference on Data Engineering, ICDE 2016* (2016). doi:10.1109/ICDE.2016.7498368.
42. Hameed, A. *et al.* A survey and taxonomy on energy efficient resource allocation techniques for cloud computing systems. *Computing* **98**, (2016).
43. Al Marri, W. J., Malluhi, Q., Ouzzani, M., Tang, M. & Aref, W. G. The similarity-aware relational database set operators. *Inf. Syst.* **59**, (2016).
44. El-Manzalawy, Y., Abbas, M., Malluhi, Q. & Honavar, V. FastRNABindR: Fast and accurate prediction of protein-RNA interface residues. *PLoS One* **11**, (2016).
45. Wang, Y., Malluhi, Q. M. & Khan, K. M. Garbled computation in cloud. *Futur. Gener. Comput. Syst.* **62**, (2016).
46. Malluhi, Q. M., Shikfa, A. & Trinh, V. C. An efficient instance hiding scheme. in *ACM International Conference Proceeding Series* vols 08-09-Dece (2016).
47. Al Bouna, B., Clifton, C. & Malluhi, Q. Anonymizing transactional datasets. *J. Comput. Secur.* **23**, (2015).
48. Bouna, B. A. L., Clifton, C. & Malluhi, Q. Efficient sanitization of unsafe data correlations. in *CEUR Workshop Proceedings* vol. 1330 (2015).
49. Abbas, M. M., Balakrishnan, P. & Malluhi, Q. M. *Evaluation of combined genome assemblies: A case study with fungal genomes*. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* vol. 9044 (2015).
50. Hamzaoui, A., Malluhi, Q., Clifton, C. & Riley, R. *Association rule mining on fragmented database*. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* vol. 8872 (2015).
51. Haj Rachid, M. & Malluhi, Q. A practical and scalable tool to find overlaps between sequences. *Biomed Res. Int.* **2015**, (2015).
52. Omatu, S. *et al. Preface*. *Advances in Intelligent Systems and Computing* vol. 373 (2015).
53. Omatu, S. *et al. Distributed computing and artificial intelligence, 12th international conference*. *Advances in Intelligent Systems and Computing* vol. 373 (2015).
54. Mershad, K., Malluhi, Q. M., Ouzzani, M., Tang, M. & Aref, W. G. Approving updates in collaborative databases. in *Proceedings - 2015 IEEE International Conference on Cloud Engineering, IC2E 2015* (2015). doi:10.1109/IC2E.2015.31.
55. Tang, M., Yu, Y., Aref, W. G., Malluhi, Q. M. & Ouzzani, M. Efficient processing of hamming-distance-based similarity-search queries over MapReduce. in *EDBT 2015 - 18th International Conference on Extending Database Technology, Proceedings* (2015). doi:10.5441/002/edbt.2015.32.
56. Tangy, M., Yuy, Y., Malluhiz, Q. M., Ouzzani, M. & Arefy, W. G. LocationSpark: A distributed in-memory data management system for big spatial data. *Proc. VLDB Endow.* **9**, (2015).
57. Rachid, M. H. & Malluhi, Q. A Practical and Scalable Tool to Find Overlaps between Sequences. *Biomed Res. Int.* **2015**, (2015).
58. Zhang, F. *et al.* CloudFlow: A data-aware programming model for cloud workflow applications on modern HPC systems. *Futur. Gener. Comput. Syst.* **51**, (2015).

59. Nassar, M., Erradi, A. & Malluhi, Q. M. A Domain Specific Language for Secure Outsourcing of Computation to the Cloud. in *Proceedings - IEEE International Enterprise Distributed Object Computing Workshop, EDOCW* vols 2015-Novem (2015).
60. Nassar, M., Erradi, A. & Malluhi, Q. M. Paillier's encryption: Implementation and cloud applications. in *2015 1st International Conference on Applied Research in Computer Science and Engineering, ICAR 2015* (2015). doi:10.1109/ARCSE.2015.7338149.
61. Abbas, M. M., Malluhi, Q. M. & Balakrishnan, P. Assessment of de novo assemblers for draft genomes: A case study with fungal genomes. *BMC Genomics* **15**, (2014).
62. Haj Rachid, M., Malluhi, Q. & Abouelhoda, M. Using the sadakane compressed suffix tree to solve the all-pairs suffix-prefix problem. *Biomed Res. Int.* **2014**, (2014).
63. Rachid, M. H., Malluhi, Q. & Abouelhoda, M. A space-efficient solution to find the maximum overlap using a compressed suffix array. in *Middle East Conference on Biomedical Engineering, MECBME* (2014). doi:10.1109/MECBME.2014.6783270.
64. Abbas, M. M., Malluhi, Q. M. & Balakrishnan, P. Scalable multi-core implementation for motif finding problem. in *Proceedings - IEEE 13th International Symposium on Parallel and Distributed Computing, ISPDC 2014* (2014). doi:10.1109/ISPDC.2014.27.
65. Sabry, F., Erradi, A., Nassar, M. & Malluhi, Q. M. *Automatic generation of optimized workflow for distributed computations on large-scale matrices*. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* vol. 8831 (2014).
66. Al Marri, W. J., Malluhi, Q., Ouzzani, M., Tang, M. & Aref, W. G. *The similarity-aware relational intersect database operator*. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* vol. 8821 (2014).
67. Nassar, M., Erradi, A., Sabry, F. & Malluhi, Q. M. A model driven framework for secure outsourcing of computation to the cloud. in *IEEE International Conference on Cloud Computing, CLOUD* (2014). doi:10.1109/CLOUD.2014.145.
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