

CURRICULUM VITAE

Sevag Gharibian

Professor (W2)

Department of Computer Science
Institute for Photonic Quantum Systems
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RESEARCH INTERESTS

Theoretical computer science: Classical and quantum algorithms and complexity theory

EMPLOYMENT

Professor (W2) Department of Computer Science, Paderborn University (UPB), Germany	2021 – present
Junior Professor (W1) Department of Computer Science, Paderborn University (UPB), Germany	2018 – 2021
Assistant Professor Department of Computer Science, Virginia Commonwealth University (VCU), USA	2014 – 2018
Simons Postdoctoral Fellow Simons Institute for the Theory of Computing, University of California, Berkeley, USA Adviser: Dr. Umesh Vazirani	Jan – May 2014
NSERC Banting Postdoctoral Fellow Computer Science Division, University of California, Berkeley, USA Adviser: Dr. Umesh Vazirani	2013 – 2014
Visiting Lecturer Department of Computer Science, University of Illinois (UIC), Chicago, USA	Aug – Dec 2012
Research and Teaching Assistant Department of Computer Science, University of Waterloo, Canada	2006 – 2012
Software developer Embarcadero Technologies, Toronto, Canada	2005 – 2006
Software developer Positions with 5 software companies as co-op student	2001 – 2004

EDUCATION

Ph.D. in Computer Science, University of Waterloo, Canada Thesis: “Approximation, proof systems, and correlations in a quantum world” Supervisor: Dr. Richard Cleve	2008 – 2012
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Master of Mathematics, University of Waterloo, Canada	2006 – 2008
Thesis: “On the hardness of the quantum separability problem and the global power of locally invariant unitary operations”	
Supervisor: Dr. Richard Cleve	
Bachelor of Computer Science, Co-op, University of Waterloo, Canada	2000 – 2005

GRANTS

- Bundesministerium für Bildung und Forschung (BMBF) 2022 – 2026
 Title: “Photonic Quantum Computers (PhoQuant)”
 Role: Co-PI at UPB (multi-institution grant)
- State of North Rhine-Westphalia 2021 – 2024
 Title: “Photonic Quantum Computing (PhoQC)”
 Role: Co-PI at UPB
- Bundesministerium für Bildung und Forschung (BMBF) – 13N16224 2022 – 2025
 Title: “Professional training for platform-independent and photonic quantum computing”
 Role: Lead PI at UPB (multi-institution grant, led by University of Jena)
- Deutsche Forschungsgemeinschaft (DFG) – 450041824 2021 – 2024
 Title: “Characterizing the complexity of physical quantum problems with oracle complexity classes”
- Deutsche Forschungsgemeinschaft (DFG) – 432788384 2020 – 2023
 Title: “The Quantum Satisfiability Problem: Algorithms & Complexity-Theoretic Hardness”
- U.S. Department of Energy (DOE) 2017 – 2018
 Title: “Quantum Algorithms from the Interplay of Simulation, Optimization, and Machine Learning”
 Role: Lead PI at VCU (multi-institution grant, led by Sandia Labs)
- National Science Foundation (NSF) CCF-1745134 2017 – 2018
 Title: “QIP 2018 Student and Postdoctoral Fellow Travel Funding Support”
- National Science Foundation (NSF) CCF-1617710 2016 – 2019
 Title: “AF: Small: Approximation algorithms for quantum mechanical problems”
- National Science Foundation (NSF) CCF-1526189 2015 – 2018
 Title: “AF: Small: Exact algorithms for the quantum satisfiability problem.”
- Dean’s Undergraduate Research Initiative, VCU School of Engineering 2015

FELLOWSHIPS AND SCHOLARSHIPS

- NSERC Banting Postdoctoral Fellowship 2013 – 2015
 Details: NSERC's top postdoctoral fellowship. Only 23 awarded annually, 6 of which can be taken up outside of Canada (as in my case).
- NSERC Postdoctoral Fellowship, declined 2013 – 2015
- NSERC CGS Michael Smith Foreign Study Supplement 2010 – 2011
- European Union-Canada Exchange Scholarship 2010 – 2011
- NSERC Alexander Graham Bell Canada Graduate Scholarship 2010 – 2012
- President's Graduate Scholarship, University of Waterloo 2010 – 2012
- Ontario Graduate Scholarship, declined 2010 – 2012
- David R. Cheriton Graduate Scholarship 2009 – 2011
- Graduate Entrance Scholarship, University of Waterloo 2006
- Ontario Graduate Scholarship in Science and Technology 2006 – 2007
- Tro Najarian Memorial Scholarship, Armenian Relief Society 2005
- Cognos Scholarship, Cognos Inc. 2001 – 2002

AWARDS/DISTINCTIONS

- Good Practices Digital Teaching Distinction, UPB 2020
- Undergraduate Research Opportunities Faculty Mentor Award, VCU 2017
- Student Choice Award for Computer Science Faculty of the Year, VCU 2017
- Teaching Excellence Award, Department of Computer Science, VCU 2016, 2017
- Achievement Award, Institute for Quantum Computing, University of Waterloo 2012
- Best Poster Award, 14th Workshop on Quantum Information Processing (QIP) 2011
- 2nd Place for Best Speaker, 5th Canadian Quantum Information Students' Conference, 2008
 Université de Montréal, Canada

RESEARCH

Preprints

1. S. Gharibian, J. Kamminga. BQP, meet NP: Search-to-decision reductions and approximate counting. arXiv:2401.03943, 2024.
2. D. Rudolph, S. Gharibian, D. Nagaj. Quantum 2-SAT on low dimensional systems is QMA1-complete: Direct embeddings and black-box simulation. arXiv:2401.02368, 2024.
3. A. Agarwal, S. Gharibian, V. Koppula, D. Rudolph. Quantum Polynomial Hierarchies: Karp-Lipton, error reduction, and lower bounds. arXiv:2401.01633, 2024.

Conference Proceedings (in reverse chronological order)

1. L. Bittel, S. Gharibian, M. Kliesch. Optimizing the depth of variational quantum algorithms is strongly QCMA-hard to approximate. *Proceedings of the 38th Computational Complexity Conference (CCC)*, volume 264, 34:1-34:24, 2023.
2. C. Cade, M. Folkertsma, S. Gharibian, R. Hayakawa, F. Le Gall, T. Morimae, J. Weggemans. Improved Hardness Results for the Guided Local Hamiltonian Problem. *Proceedings of the 50th EATCS International Colloquium on Automata, Languages and Programming (ICALP)*, volume 261, 31:1-32:19, 2023.
4. S. Gharibian, D. Rudolph. Quantum space, ground space traversal, and how to embed multi-prover interactive proofs into unentanglement. *Proceedings of the 14th Innovations in Theoretical Computer Science (ITCS)*, volume 251, 53:1-53:23, 2023.
5. Watson, J. Bausch, S. Gharibian. The complexity of translationally invariant problems beyond ground state energies. *Proceedings of the 40th International Symposium on Theoretical Aspects of Computer Science (STACS)*, volume 254, 54:1–54:21, 2023.
6. S. Gharibian, F. Le Gall. Dequantizing the Quantum Singular Value Transformation: Hardness and applications to quantum chemistry and the quantum PCP conjecture. *Proceedings of the 54th Annual ACM Symposium on Theory of Computing (STOC)*, pages 19-32, 2022.
7. S. Gharibian and D. Rudolph. On polynomially many queries to NP or QMA oracles. *Proceedings of the 13th Innovations in Theoretical Computer Science (ITCS)*, volume 215, pages 75:1-75:27, 2022. Full version at arXiv:2111.02296.
8. A. Broadbent, S. Gharibian and H.-S. Zhou. Towards quantum one-time memories from stateless hardware. *Proceedings of the 15th Conference on the Theory of Quantum Computation, Communication and Cryptography (TQC)*, volume 158, pages 6:1-6:25, 2020.
9. S. Gharibian, S. Piddock and J. Yirka. Oracle complexity classes and local measurements on physical Hamiltonians. *Proceedings of the 37th Symposium on Theoretical Aspects of Computer Science (STACS)*, volume 154, pages 20:1-20:37, 2020.
10. S. Gharibian and O. Parekh. Almost optimal classical approximation algorithms for a quantum generalization of Max-Cut. *Proceedings of the 22nd International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)*, volume 145, pages 31:1-31:17, 2019.
11. S. Gharibian, M. Santha, J. Sikora, A. Sundaram and J. Yirka. Quantum generalizations of the polynomial hierarchy with applications to QMA(2). *Proceedings of 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS)*, volume 117, pages 58:1-58:16, 2018.
12. M. Aldi, N. de Beaudrap, S. Gharibian and S. Saedi. On efficiently solvable cases of Quantum k-SAT. *Proceedings of 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS)*, volume 117, pages 38:1-38:16, 2018.

13. S. Gharibian and J. Yirka. The complexity of simulating local measurements on quantum systems. *Proceedings of the 12th Conference on the Theory of Quantum Computation, Communication and Cryptography (TQC 2017)*, volume 73, pages 2:1-2:17, 2018.
14. N. de Beaudrap and S. Gharibian. A linear time algorithm for quantum 2-SAT. *Proceedings of the 31st Conference on Computational Complexity (CCC)*, volume 50, pages 27:1-27:21, 2016.
15. S. Gharibian, J. Sikora. Ground state connectivity of local Hamiltonians. *Proceedings of the 42nd International Colloquium on Automata, Languages and Programming (ICALP)*, volume 9134, pages 617 – 628, 2015.
16. S. Gharibian and J. Kempe. Hardness of approximation for quantum problems. *Proceedings of the 39th International Colloquium on Automata, Languages and Programming (ICALP)*, pages 387-398, Springer, 2012.
17. S. Gharibian and J. Kempe. Approximation algorithms for QMA-complete problems. *Proceedings of the 26th IEEE Conference on Computational Complexity (CCC)*, 178-188, 2011.
18. D. Bruß, S. Gharibian, and H. Kampermann. Revealing quantum entanglement via locally noneffective operations. *Proceedings of 3rd International Symposium on Quantum Interaction (QI)*, pages 3-5, 2009.

Journal Publications (in reverse chronological order)

1. (Invited) S. Gharibian. Guest Column: The 7 faces of quantum NP. *ACM SIGACT News*, 54(4):54-91, 2024.
2. S. Gharibian, F. Le Gall. Dequantizing the Quantum Singular Value Transformation: Hardness and applications to quantum chemistry and the quantum PCP conjecture. *SIAM Journal on Computing*, 54(4), 2023.
3. S. Gharibian, M. Santha, J. Sikora, A. Sundaram and J. Yirka. Quantum generalizations of the polynomial hierarchy with applications to QMA(2). *Computational Complexity*, 31(13), 2022.
4. A. Broadbent, S. Gharibian and H.-S. Zhou. Towards quantum one-time memories from stateless hardware. *Quantum*, 5:429, 2021.
5. M. Aldi, N. de Beaudrap, S. Gharibian and S. Saedi. On efficiently solvable cases of Quantum k-SAT. *Communications in Mathematical Physics*, 381:209-256, 2021. (Open access version published at doi.org/10.1007/s00220-020-03843-9, 2020.)
6. S. Gharibian and J. Yirka. The complexity of simulating local measurements on quantum systems. *Quantum*, 3:189, 2019.
7. S. Gharibian, J. Sikora. Ground state connectivity of local Hamiltonians. *ACM Transactions on Computation Theory*, 10 (2), 2018.
8. S. Gharibian, Y. Huang, Z. Landau, S. W. Shin. Quantum Hamiltonian Complexity. *Foundations and Trends in Theoretical Computer Science*, 10 (3):159-282, 2015.

9. S. Gharibian, Z. Landau, S. W. Shin, and G. Wang. Tensor network non-zero testing. *Quantum Information & Computation* 15 (9 & 10):885-899, 2015.
10. S. Gharibian and J. Kempe. Hardness of approximation for quantum problems. *Quantum Information & Computation* 14 (5 & 6): 517-540, 2014.
11. D. Berry, R. Cleve and S. Gharibian. Gate-efficient discrete simulations of continuous-time quantum query algorithms. *Quantum Information & Computation* 14 (1 & 2): 1-30, 2014.
12. S. Gharibian, J. Sikora, and S. Upadhyay. QMA variants with polynomially many provers. *Quantum Information & Computation* 13(1 & 2):0135-0157, 2013.
13. S. Gharibian and J. Kempe. Approximation algorithms for QMA-complete problems. *SIAM Journal on Computing* 41(4): 1028-1050, 2012.
14. S. Gharibian. Quantifying non-classicality with local unitary operations. *Physical Review A* 86:042106, 2012.
15. M. Piani, S. Gharibian, G. Adesso, J. Calsamiglia, P. Horodecki and A. Winter. All non-classical correlations can be activated into distillable entanglement. *Physical Review Letters* 106: 220403, 2011.
16. S. Gharibian, M. Piani, G. Adesso, J. Calsamiglia, P. Horodecki. Characterizing quantumness via entanglement creation. *International Journal of Quantum Information* 9(7 & 8):1701-1713, 2011.
17. S. Gharibian. Strong NP-hardness of the quantum separability problem. *Quantum Information & Computation* 10(3 & 4): 343-360, 2010.
18. S. Gharibian, H. Kampermann, and D. Bruß. On global effects caused by locally noneffective unitary operations. *Quantum Information & Computation* 9(11 & 12): 1013-1029, 2009.
19. A. Datta and S. Gharibian. Signatures of non-classicality in mixed-state quantum computation. *Physical Review A* 79:042325, 2009.

Invited Conference/Workshop Talks (in reverse chronological order, grouped by paper/topic)

1. (Upcoming) S. Gharibian. 49th International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM), 2024.
2. S. Gharibian. Quantum algorithms – what’s quantum complexity theory got to do with it? Quantum Techniques in Machine Learning (QTML), CERN, Switzerland, 2023.
3. L. Bittel, S. Gharibian, M. Kliesch. The optimal depth of variational quantum algorithms is QCMA-hard to approximate.
 - Quantum Information Workshop, Ruhr University Bochum, 2023.
 - Frontiers of near-term quantum computing, Chalmers University, Sweden, 2023.
 - 18th Central European Quantum Information Processing workshop (CEQIP), Slovakia, 2023

- Workshop on Quantum Information, Focus Semester on Quantum Information, Saarland University, Germany, 2022.
4. (Plenary) S. Gharibian. On the complexity of many-body quantum systems, Matter and Light for Quantum Computing (ML4Q) Excellence Cluster Conference, Germany, 2022.
 5. S. Gharibian. Workshop on semidefinite and polynomial optimization, Centrum Wiskunde & Informatica (CWI), Netherlands, 2022.
 6. S. Gharibian. A gentle introduction to quantum complexity theory. Bad Honnef Physics School on Quantum Computing, Germany, 2022.
 7. S. Gharibian, F. le Gall. Dequantizing the Quantum Singular Value Transformation: Hardness and Applications to Quantum Chemistry and the Quantum PCP Conjecture.
 - Quantum and lattices joint reunion workshop, Simons Institute for the Theory of Computing, UC Berkeley, 2022.
 - 4th Munich Conference on Quantum Science and Technology, Germany, 2022.
 - 11th Heinz Nixdorf Symposium, Paderborn, Germany, 2022.
 8. S. Gharibian. A gentle introduction to quantum proofs. Workshop on The Multiple Facets of Quantum Proofs, 54th Annual ACM Symposium on Theory of Computing (STOC 2022)..
 9. S. Gharibian. Reconfiguration in the quantum setting. Workshop on Combinatorial Reconfiguration, Banff International Research Station, Canada, 2022.
 10. S. Gharibian. Educating the Future Quantum Information Workforce: The Pedagogy of Quantum Technologies Workshop, Quantum Initiative, University of South Florida, USA, 2021.
 11. S. Gharibian. What might a quantum computer be good for? 2021 German-American Frontiers of Engineering Symposium, Oak Ridge National Laboratory, USA, 2021.
 12. J. D. Watson, J. Bausch, S. Gharibian. The complexity of translationally invariant problems beyond ground state energies. Quantum Software and Optimisation online workshop, Chalmers University of Technology, Sweden, 2021.
 13. S. Gharibian. An introduction to Quantum Complexity Theory. Dagstuhl Seminar 20385, “Algebraic and Other Aspects of Complexity Theory”. Schloss Dagstuhl, Germany, 2020.
 14. S. Gharibian. The Quantum Approximate Optimization Algorithm. Mini-Workshop on Mixers for QAOA, Chalmers University of Technology, Sweden, 2020.
 15. S. Gharibian, M. Santha, J. Sikora, A. Sundaram and J. Yirka. Quantum generalizations of the polynomial hierarchy with applications to QMA(2). Quantum Innovators Workshop, Institute for Quantum Computing, University of Waterloo, Canada, 2018.
 16. M. Aldi, N. de Beudrap, S. Gharibian and S. Saeedi. On efficiently solvable cases of Quantum k-SAT. Dagstuhl Seminar 18391, “Algebraic Methods in Computational Complexity”. Schloss Dagstuhl, Germany, 2018.

17. A. Broadbent, S. Gharibian, and H.-S. Zhou. Towards quantum one-time memories from stateless hardware. 18th Asian Quantum Information Science Conference (AQIS 2018) Satellite Workshop on Quantum Computing, Kyoto University, Japan, 2018.
18. S. Gharibian, Y.-K. Liu. Classical approximation algorithms for quantum constraint satisfaction problems.
 - SIAM Conference on Optimization, Vancouver, Canada, 2017.
 - Canadian Mathematical Society (CMS) Winter Meeting, Canada, 2016.
 - Semidefinite and Matrix Methods for Optimization and Communication, National University of Singapore, Singapore, 2016.
19. S. Gharibian, J. Sikora. Ground state connectivity of local Hamiltonians.
 - Workshop around BQP, Tokyo Institute of Technology (Tamachi Campus), Japan, 2015.
 - Quantum Hamiltonian Complexity Reunion Workshop, Simons Institute for the Theory of Computing, University of California, Berkeley, 2015.
20. S. Gharibian, J. Kempe. Hardness of approximation for quantum problems. ELC Workshop on Inapproximability, University of Electro-Communications, Chofu, Japan, 2014.
21. S. Gharibian. Quantifying non-classicality with local unitary operations. Mini-Workshop on the General Quantumness of Correlations, University of Waterloo, Canada, 2012.
22. S. Gharibian and J. Kempe. Approximation algorithms for QMA-complete problems. Canadian Institute for Advanced Research (CIFAR) Quantum Information Processing meeting, Hot Topics Session, 2011.
23. D. Bruß, S. Gharibian, and H. Kampermann. Revealing quantum entanglement via locally noneffective operations. 3rd International Symposium on Quantum Interaction (QI), 2009.

Contributed Talks (in reverse chronological order, grouped by paper)

1. L. Bittel, S. Gharibian, M. Kliesch. Optimizing the depth of variational quantum algorithms is strongly QCMA-hard to approximate. CCC 2023, QIP 2023.
2. S. Gharibian, R. Hayakawa, F. Le Gall, T. Morimae. Improved Hardness Results for the Guided Local Hamiltonian Problem. ICALP 2023, QIP 2023.
3. Watson, J. Bausch, S. Gharibian. The complexity of translationally invariant problems beyond ground state energies. STACS 2023.
4. S. Gharibian and D. Rudolph. Quantum space, ground space traversal, and how to embed multi-prover interactive proofs into unentanglement. ITCS 2023, QIP 2022.
5. S. Gharibian, F. Le Gall. Dequantizing the Quantum Singular Value Transformation: Hardness and applications to quantum chemistry and the quantum PCP conjecture. STOC 2022, QIP 2022.

6. S. Gharibian and D. Rudolph. On polynomially many queries to NP or QMA oracles. ITCS 2022, TQC 2022.
7. J. D. Watson, J. Bausch, S. Gharibian. The complexity of translationally invariant problems beyond ground state energies. TQC 2021, Workshop on Combinatorial Reconfiguration (CORE 2021, affiliated with ICALP 2021).
8. A. Broadbent, S. Gharibian and H.-S. Zhou. Towards quantum one-time memories from stateless hardware. TQC 2020.
9. S. Gharibian, S. Piddock and J. Yirka. Oracle complexity classes and local measurements on physical Hamiltonians. STACS 2020, QIP 2020. Preliminary version at AQIS 2018.
10. S. Gharibian and O. Parekh. Almost optimal classical approximation algorithms for a quantum generalization of Max-Cut. APPROX 2019, QIP 2020, and KOLKOM 2019.
11. S. Gharibian, M. Santha, J. Sikora, A. Sundaram and J. Yirka. Quantum generalizations of the polynomial hierarchy with applications to QMA(2). Plenary talk at AQIS 2018, MFCS 2018.
12. M. Aldi, N. de Beaudrap, S. Gharibian and S. Saeedi. On efficiently solvable cases of Quantum k-SAT. Plenary talk at AQIS 2018, MFCS 2018, KOLKOM 2018.
13. S. Gharibian and J. Yirka. The complexity of estimating local physical quantities. TQC 2017.
14. N. de Beaudrap and S. Gharibian. A linear time algorithm for quantum 2-SAT. CCC 2016, QIP 2016.
15. S. Gharibian and J. Sikora. Ground state connectivity of local Hamiltonians. ICALP 2015.
16. S. Gharibian, Z. Landau, S. W. Shin, and G. Wang. Tensor network non-zero testing. Long talk at AQIS 2014.
17. S. Gharibian and J. Kempe. Hardness of approximation for quantum problems. ICALP 2012, QIP 2012.
18. D. Berry, R. Cleve and S. Gharibian. Gate-efficient discrete simulations of continuous-time quantum query algorithms. QIP 2012, AQIS 2012.
19. S. Gharibian and J. Kempe. Approximation algorithms for QMA-complete problems. CCC 2011.
20. S. Gharibian. Strong NP-hardness of the quantum separability problem. SQuInT 2009.
21. S. Gharibian. Strong NP-hardness of the quantum separability problem. 5th Canadian Quantum Information Students' Conference (CQISC 2008).

STUDENT SUPERVISION

Postdocs:

Lial Khaluf, Paderborn University (UPB)

2023 – present

Ph.D. Students:

Dhruva Sambrani, UPB	2023 – present
Carsen Hecht, UPB	2023 – present
Giwrgos Karaiskos, UPB	2022 – present
Jonas Kamminga, UPB	2022 – present
Dorian Rudolph, UPB	2021 – present
Jianqiang Li, VCU	2016 – 2018
Seyran Saeedi, VCU	2015 – 2018

Masters Students:

Dennis Nolte, UPB	2022 – present
Carsten Hecht, UPB	2021 – 2022
Daniel Warkentin, UPB	2020 – 2022
Jannes Stubbemann, UPB	2018 – 2020
Dorian Rudolph, UPB	2020
• Details: Recipient of UPB Outstanding Thesis Award	

Undergraduate Students:

Avantika Agarwal, IIT Delhi	2022
• Recipient of DAAD Wise Fellowship	
Alexander Schnelle, UPB	2020 – 2021
Justin Yirka, VCU	2015 – 2018
Aidan Collins, VCU	2014 – 2015

TEACHING

Teaching Experience*Course Instructor:*

• Fundamental Algorithms, UPB	2018 – 2023
• Introduction to Quantum Computation, UPB	2018 – 2023
• Data Structures and Algorithms (in German), UPB	2022
• Quantum Algorithms, UPB	2021
• Seminar: Modern Approaches to Network Flow Problems, UPB	2021
• Seminar: Quantum Computation, UPB	2019, 2020, 2021
• Proseminar: Advanced algorithms, in theory, UPB	2021
• Quantum Complexity Theory, UPB	2019, 2020
• CMSC 303 Introduction to the Theory of Computation, VCU	2015, 2016, 2017
• CMSC 691 Convex Optimization, VCU	2016
• CMSC 491 Introduction to Quantum Computation and Information, VCU	2015
• CS 401 Computer Algorithms I, University of Illinois, Chicago	2012
• CS 301 Languages and Automata, University of Illinois, Chicago	2012

Teaching Certifications

Certificate in University Teaching, University of Waterloo

2012

SERVICE**International and National Service***Newspaper interviews*

Die Zeit, “*Die Mathematiker der Tafelrunde*” 2020
 Major German national weekly newspaper, topic: Quantum interactive proofs

Committees

Steering Committee/Board of Trustees

International Colloquium on Automata, Languages and Programming (ICALP) 2023 – 2024
 Secretary, Computational Complexity Conference (CCC) 2016 – 2018

Organizing Committee

Chair, International Colloquium on Automata, Languages and Programming (ICALP) 2023
 Dagstuhl Seminar 20311: Quantum Complexity: Theory and Application, Germany 2021
 9th Canadian Quantum Information Students' Conference (CQISC), Canada 2012

Program Committee

Annual Conference on Quantum Information Processing (QIP) 2023
 Conference on Theory of Quantum Computation, Communication and Cryptography (TQC) 2015, 2016, 2023
 International Colloquium on Automata, Languages and Programming (ICALP) 2022
 International Symposium on Algorithms and Computation (ISAAC) 2017
 Asian Quantum Information Science Conference (AQIS) 2017

Student Travel Awards Committee

2016 – 2018

Annual Conference on Quantum Information Processing (QIP)

Proceedings, Record Keeping, and Registration Subcommittees

2014

IEEE Conference on Computational Complexity (CCC)

Funding Strategy Committees

DFG Roundtable Discussion on Algorithms and Software for Quantum Computing 2023

Journal Editorial Boards

Coordinating Editor, *Quantum* 2021 – present
 Founding Editor, *Quantum* 2016 – 2021

University Service*Chair*

- PhoQS Quantum Seminar Series, UPB 2019 – 2020
- Master Teacher Task Force, VCU School of Engineering 2017

- Computer Science Day, VCU 2014 – 2017
- Weekly Research Seminar, Department of Computer Science, VCU 2014 – 2017

Coordinator

- International Student Exchange Programs, Faculty of Computer Science, Electrical Engineering, and Mathematics, UPB 2019 – 2023
- Quantum Computing Reading Group, University of California, Berkeley 2013
- Weekly Lunch Seminar, Institute for Quantum Computing, Univ. of Waterloo 2008 – 2012