




Ramin Ayanzadeh

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CURRENT EXPERIENCE	Georgia Institute of Technology , Atlanta, GA - NSF/CRA/CCC CI Postdoctoral Fellow at the School of Computer Science - Mentor: Moinuddin Qureshi	Nov 2020 – Present
EDUCATION	University of Maryland, Baltimore County , Baltimore, MD Ph.D., Computer Science, May 2020 Dissertation: “Leveraging Artificial Intelligence to Advance Problem-Solving with Quantum Annealers” Co-advisors: Milton Halem & Tim Finin Science and Research Azad University , Tehran, Iran M.S., Computer Science, Aug 2009 Tabriz Azad University , Tabriz, Iran B.Sc., Computer Science, Aug 2006	
RESEARCH INTERESTS	<ul style="list-style-type: none">• Computer Architecture, Software Systems, Compiler, and Programming Tools for Digital and Analog Quantum Computers, Quantum Annealers, Ising/Annealing Processing Units, and Emerging Accelerators• Quantum Information Processing, Quantum Artificial Intelligence, Quantum Machine Learning, and Quantum NLP• Boolean Satisfiability (SAT) and Constraint Satisfaction Problems (CSP)• Artificial Intelligence and Machine Learning• Optimization and Meta-Heuristics• Scientific Computing and Bioinformatics	
RESEARCH SUMMARY	<p>Quantum computers promise to address problems beyond the capabilities of classical computing; however, current and near-term quantum computers are noisy and prone to errors, limiting their reliability, applicability, and scalability. In my research, I focus on full-stack optimization for both digital and analog quantum computers, addressing every layer—from the application, through programming languages and compilers, to error suppression, mitigation, and correction. I am also interested in fault-tolerant quantum computing and am exploring opportunities in real-time decoding and non-conventional error-correcting techniques for various types of quantum computers. The convergence of quantum computing, Artificial Intelligence (AI), and Machine Learning (ML) can revolutionize science, technology, the economy, and society as a whole. I explore a wide array of opportunities within quantum intelligence, including: investigating AI/ML to enhance the fidelity of noisy quantum hardware, leveraging quantum-ML hybrid systems to tackle practical problems, and developing advanced quantum and classical-quantum hybrid optimization techniques.</p>	

FELLOWSHIPS &
GRANTS

1. Recipient of the NSF/CRA/CCC Computing Innovation Fellow, one among 59 researchers across the USA, 2020 – 2023 (\$200,000)
2. IonQ Q-Lab Fellowship: Awarded a \$100,000 research grant for privileged access to IonQ hardware systems to accelerate the development of useful NISQ applications, 2023 – 2024.
3. NASA grant (NNH21ZDA001N-AIST21-2-0045): Awarded (PI Milton Halem) \$2,091,355 for research proposal entitled "Towards a NU-WRF based Mega Wildfire Digital Twin: Smoke Transport Impact Scenarios on Air Quality, Cardiopulmonary Disease and Regional Deforestation", 07/12/2022 – 07/11/2025
Role: non-funding collaborator
4. UMBC Graduate School Research Grant, 2020 (\$1000)
5. UMBC Graduate School Research Grant, 2019 (\$1000)
6. Meyerhoff Graduate Fellowship: Awarded the NIH Meyerhoff graduate fellowship, 2018 – 2019 (\$30,000)
7. NSF/IUCRC Phase 2 CHMPR D-Wave industry member: Awarded (PI Milton Halem) \$100,000 for research proposal entitled "D-Wave quantum annealing to address hybrid machine learning", 06/01/2017 – 06/01/2018
Role: Key individual, responsible for conducting the research and preparing deliverables
8. NASA grant (NNX15AK58G AIST16-0091): Awarded (PI Milton Halem) \$2,051,670 for research proposal entitled "Computing Technologies: An Assessment of Hybrid Quantum Annealing Approaches for Inferring and Assimilating Satellite Surface Flux Data into Global Land Surface Models", 09/01/2017 – 08/31/2019
Role: Led the effort on exploring existing and near-term quantum annealers for remote sensing applications
9. Microsoft Diversity Scholarship: Recipient of the Microsoft Diversity scholarship for attending the Tapia Conference, 2018 (\$500)
10. UMBC Graduate School Research Grant, 2018 (\$1000)

HONORS &
AWARDS

1. Best poster presentation award for research entitled "Improving the Fidelity of Quantum Annealers by Injecting Controlled Perturbations" at MICRO55/CWIDCA, October 2022.
2. 2nd place in 2019 ACM Graduate Student Research Competition (SRC): Awarded the 2nd rank for the research entitled "Compiling for Quantum Annealers" among 20 candidates at ACM Richard Tapia Celebration of Diversity in Computing, 2019
3. Google Lime Scholarship: Awarded Google Lime Scholarship for students with excellent academic and leadership backgrounds. 12 awardees among students in computing science with disability in the USA and Canada, 2018 (\$10,000)
4. USBLN Rising Leadership Academy Award: Awarded the 2017, 2018 & 2019 scholarships to attend the annual conference. 100 awardees among 1,500+ attendees
5. IAAP Scholarship: Awarded the IAAP scholarship for American-Iranian professionals with excellent achievements. 15 awardees among 500+ applicants, 2017 (\$500)
6. Laurence Short Award: Awarded the 2012 Laurence Short Award for international students with outstanding achievements. 5 awardees among all international students at the University of Baltimore, 2012
7. 3rd Prize, National Urban Robot Competition 2006 (Tehran, Iran): Awarded the third prize for designing and prototyping smart shopping carts for department stores and warehouses. Among 200+ teams, 2006

1. **Ramin Ayanzadeh**, Narges Alavisamani, Poulami Das, and Moinuddin Qureshi, 2023. FrozenQubits: Boosting Fidelity of QAOA by Skipping Hotspot Nodes. *In Proceedings of the 28th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS'23)*.
2. **Ramin Ayanzadeh**, Poulami Das, Swamit S. Tannu, and Moinuddin Qureshi, 2022. EQUAL: Improving the fidelity of quantum annealers by injecting controlled perturbations. *In Proceedings of the 2022 IEEE International Conference on Quantum Computing and Engineering (QCE'22)*.
3. Swamit Tannu, Poulami Das, **Ramin Ayanzadeh**, and Moinuddin Qureshi, 2022. HAMMER: boosting fidelity of noisy quantum circuits by exploiting Hamming behavior of erroneous outcomes. *In Proceedings of the 27th International Conference on Architectural Support for Programming Languages and Operating Systems* (pp. 529-540) (ASPLOS'22).
4. **Ramin Ayanzadeh**, John Dorband, Milton Halem, and Tim Finin, 2022. Quantum-assisted greedy algorithms *In the Proceedings of the IGARSS 2022 IEEE International Geoscience and Remote Sensing Symposium* (pp. 4911–4914).
5. **Ramin Ayanzadeh**, John Dorband, Milton Halem, and Tim Finin, 2021. Multi-qubit correction for quantum annealers. *Nature /Scientific Reports*, 11(1), pp.1-12.
[Editor's choice: quantum computing]
[Featured in D-Wave Systems Publications]
6. **Ramin Ayanzadeh**, Milton Halem, and Tim Finin, 2020. Reinforcement quantum annealing: A hybrid quantum learning automata. *Nature /Scientific reports*, 10(1), pp.1-11.
[Top 100 in Physics]
[Featured in D-Wave Systems Publications]
7. **Ramin Ayanzadeh**, Milton Halem, and Tim Finin, 2020. An ensemble approach for compressive sensing with quantum annealers. *In the Proceedings of the IGARSS 2020 IEEE International Geoscience and Remote Sensing Symposium* (pp. 3517-3520).
8. Ahmad Mousavi, Mehdi Rezaee, and **Ramin Ayanzadeh**, 2020. A survey on compressive sensing: classical results and recent advancements. *Journal of Mathematical Modeling*, 8(3), pp.309-344.
9. Amir Khosravani-Rad, **Ramin Ayanzadeh**, and Elaheh Raisi, 2014. Dynamic Parameters Optimization for Enhancing Performance and Stability of PSO , *Trends in Applied Science Research*, vol. 9, no. 1, pp. 238-241.
10. Ali-Asghar Gholami, **Ramin Ayanzadeh**, and Elaheh Raisi, 2014. Fuzzy Honey Bees Foraging Optimization: Swarm Intelligence Approach for Clustering , *Journal of Artificial Intelligence*, vo. 7, no. 1, pp. 13-23.
11. Forough Marzban, **Ramin Ayanzadeh**, and Pouria Marzban, 2014. Discrete Time Dynamic Neural Networks for Predicting Chaotic Time Series , *Journal of Artificial Intelligence*, vol. 7, no. 1, pp. 24-24.
12. Alireza Jabari, **Ramin Ayanzadeh**, Elaheh Raisi, and Aidin Sadighi, 2013. Central Limit Theorem Based Cellular Automata for Generating Normal Random Numbers , *Information Technology Journal*, vol. 12, no. 12.
13. **Ramin Ayanzadeh**, Azam S. Zavar Mousavi, and Ehsan Shahamatnia, 2012. Fuzzy Cellular Automata Based Random Numbers Generation , *Trends in Applied Science Research*, vol. 7. no. 1, pp. 96-102.

14. Alireza Jaberi, **Ramin Ayanzadeh** and Azam S. Zavar Mousavi, 2012. Two-Layer Cellular Automata Based Cryptography , *Trends in Applied Sciences Research*, vo. 7, no. 1, pp., 68-77.
15. **Ramin Ayanzadeh**, Azam S. Zavar Mousavi, and Hamidreza Navidi, 2011. Honey Bees Foraging Optimization for Mixed Nash Equilibrium Estimation , *Trends in Applied Sciences Research*, vol. 6, no. 12, pp., 1352-1359.
16. Ehsan Shahamatnia, **Ramin Ayanzadeh**, Rita A. Rebeiro, and Saeid Setayeshi, 2011. Adaptive Imitation Scheme for Memetic Algorithms , *Advances in Information and Communication Technology*, vol. 349/20, pp. 109-116.
17. **Ramin Ayanzadeh**, Kaveh Hassani, Yaghoob Moghaddas, Hadi Gheiby, and Saeid Setayeshi, 2009. Innovative Approach to Generate Uniform Random Numbers Based on a Novel Cellular Automata , *Journal of Applied Science*, vol. 9, no. 22, pp. 4071-4075.
18. **Ramin Ayanzadeh**, Ehsan Shahamatnia, and Saeid Setayeshi, 2009. Determining Optimum Queue Length in Computer Networks by Using Memetic Algorithms , *Journal of Applied Science*, vol. 9, no. 15, pp. 2847-2851.

The following manuscripts have been written in Persian / Farsi and published in Iran, and I am happy to share them.

19. Ramin Javadzadeh, and **Ramin Ayanzadeh**, 2012. Identification of Malignant Tumors from Mammograms Based on Artificial Immune Systems, *The 6th International Conference on Fuzzy Information and Engineering*, Babolsar, Iran. (in Persian)
20. Amir Khosravani-Rad, **Ramin Ayanzadeh**, Elham Nateghi, and Dorsa Ziaei, 2012. Fuzzy Based Adaptive Particle Swarm Optimization, *The 6th International Conference on Fuzzy Information and Engineering*, Babolsar, Iran. (in Persian)
21. Ali-Asghar Gholami, **Ramin Ayanzadeh**, Dorsa Ziaei, and Elham Nateghi, 2012. Fuzzy Honey Bees Foraging Optimization for Clustering Applications, *The 6th International Conference on Fuzzy Information and Engineering*, Babolsar, Iran. (in Persian)
22. Ramin Javadzadeh, **Ramin Ayanzadeh** and Emad Javadzadeh, 2012. Artificial Immune Systems and Fuzzy Cellular Learning Automata for Locating Critical Failure Surface in Rock Slopes, *12th International Conference of Fuzzy Systems*, Babolsar, Iran. (in Persian)
23. Ramin Javadzadeh, and **Ramin Ayanzadeh**, 2012. Clonal Selection Based Approach for Enhancing the Accuracy of Diagnosing Breast Cancer, *1st National Conference on Computer Science, Engineering, and Information Technology*, Shiraz, Iran. (in Persian)
24. **Ramin Ayanzadeh**, Azam S. Zavar Mousavi, and Saeid Setayeshi, 2011. Analysis of Brain Emotional Learning Behavior in Classification and Pattern Recognition, *2nd International Conference on Contemporary Issues in Computer and Information Sciences (CICIS 2011)*, Zanjan, Iran. (in Persian)
25. Alireza Jaberi, **Ramin Ayanzadeh** and Ehsan Shahamatnia, 2011. A Novel Fuzzy Cellular Automata for Uniform Random Number Generation, *2nd International Conference on Contemporary Issues in Computer and Information Sciences (CICIS 2011)*, Zanjan, Iran. (in Persian)
26. Hadi Gheiby, Hadi Cheheltani, and **Ramin Ayanzadeh**, 2011. A Novel Numerical Approach for Optimum Project Management, *2nd International Conference on Contemporary Issues in Computer and Information Sciences (CICIS 2011)*, Zanjan, Iran. (in Persian)

27. **Ramin Ayanzadeh** and Hamidreza Navidi, 2011. Solving Static Games with Complete Information Using Honey Bees Foraging Optimizations, *2nd International Conference on Contemporary Issues in Computer and Information Sciences (CICIS 2011)*, Zanjan, Iran. (in Persian)
28. **Ramin Ayanzadeh**, Azam S. Zavar Mousavi, and Saeid Setayeshi, 2011. Fossil Fuels Consumption Prediction Using Emotional Learning in Amygdala, *19th Iranian Conference on Electrical Engineering*, Tehran, Iran. (in Persian)
29. **Ramin Ayanzadeh** and Saeid Setayeshi, 2010. Modeling Growth of Solid Cancerous Tumor Based on Sugars-Cape Model, *18th Iranian Conference on Electrical Engineering (ICEE2010)*, Isfahan, Iran. (in Persian)
30. **Ramin Ayanzadeh**, Kaveh Hassani, Yaghoob Moghaddas, Hadi Gheiby, and Saeid Setayeshi, 2010. Multi-Layer Cellular Automata for Generating Normal Random Numbers, *18th Iranian Conference on Electrical Engineering (ICEE2010)*, Isfahan, Iran, pp. 495-500. (in Persian)
31. **Ramin Ayanzadeh**, Yaghoob Moghaddas, and Saeid Setayeshi, 2009. Two Layers Cellular Automata for Generating Uniform Random Numbers, *17th Iranian Conference on Electrical Engineering (ICEE2010)*, Isfahan, Iran. (in Persian)
32. **Ramin Ayanzadeh** and Saeid Setayeshi, 2009. Modeling Blood Groups Behavior in Human Societies Based on Simulating Artificial Life, *3rd Joint Congress on Fuzzy and Intelligent Systems*, Yazd, Iran, pp. 468-473. (in Persian)
33. **Ramin Ayanzadeh** and Saeid Setayeshi, 2009. Applying Cellular Learning Automata as Imitation Operator in Cellular Memetic Algorithms, *3rd Joint Congress on Fuzzy and Intelligent Systems*, Yazd, Iran. (in Persian)
34. **Ramin Ayanzadeh** and Saeid Setayeshi, 2008. Proposing a New Feature to Analyze Cry Differences and Feasibility Study of Characterizing a Speaking Model in the Cry of Below Two Years Old Infants for Intelligent Nursing, *2nd Joint Congress on Fuzzy and Intelligent Systems*, Tehran, Iran. (in Persian)
35. **Ramin Ayanzadeh**, Ehsan Shahamatnia, Saeid Setayeshi, and Mohammad Teshnehlab, 2008. A Novel Optimization Algorithm Based on Cellular Automata and Particle Swarm Optimization, *2nd Joint Congress on Fuzzy and Intelligent Systems*, Tehran, Iran. (in Persian)
36. **Ramin Ayanzadeh**, Saeid Setayeshi, and Mohammad Teshnehlab, 2008. Applying Fuzzy Operators in Cellular Automata for Uniform Random Number Generation, *2nd Joint Congress on Fuzzy and Intelligent Systems*, Tehran, Iran. (in Persian)
37. **Ramin Ayanzadeh**, Ehsan Shahamatnia, Fariborz Mahmoudi, and Saeid Setayeshi, 2008. Modeling Optimum Queue Management in Computer Networks, *2nd Joint Congress on Fuzzy and Intelligent Systems*, Tehran, Iran. (in Persian)
38. Hadi Gheiby, **Ramin Ayanzadeh**, Fariborz Mahmoudi, and Mohammad Teshnehlab, 2008. Designing an Expert System for Optimum Construction Projects Management, *2nd Joint Congress on Fuzzy and Intelligent Systems*, Tehran, Iran. (in Persian)
39. Yaghoob Moghaddas, **Ramin Ayanzadeh** and Abolfazl Toroghi Haghghat, 2008. A New Algorithm for Improving the Uniformity of Random Number Generators Based on Calculation with Monte Carlo Method, *2nd Joint Congress on Fuzzy and Intelligent Systems*, Tehran, Iran. (in Persian)

40. Ehsan Shahamatnia, **Ramin Ayanzadeh**, Soleyman Pasban, and Fariborz Mahmoudi, 2008. A Novel Parallel Swarm Approach for Cell Image Segmentation, *5th Conference on Machine Vision and Image Processing*, Tabriz, Iran. (in Persian)
41. **Ramin Ayanzadeh**, Ramin Javadzadeh, and Saeid Setayeshi, 2008. A Novel Approach for Imitation Ratio Optimization in Memetic Particle Swarm Optimization Algorithms, *1st National Conference on Software Engineering*, Tehran, Iran. (in Persian)
42. Hadi Gheiby, Yaghoub Moghaddas, **Ramin Ayanzadeh** and Kaveh Hassani, 2008. Combination of Clustering and Indexing Methods in Image Retrieval for Precision and Time Improvement in Searching Big Databases, *1st National Conference on Software Engineering*, Tehran, Iran. (in Persian)
43. Kaveh Hassani, Hadi Gheiby, **Ramin Ayanzadeh** and Yaghoub Moghaddas, 2008. Solving Time-Tabling Problem Using a Novel Heuristic for Initializing Chromosomes in Memetic Algorithms, *1st National Conference on Software Engineering*, Tehran, Iran. (in Persian)
44. **Ramin Ayanzadeh**, and Mohammad Teshnehlab, 2007. Progressive Behavior Evolution in Memetic Algorithms by Using Adaptive Imitation, *1st Joint Congress on Fuzzy and Intelligent Systems*, Mashhad, Iran. (in Persian)
45. **Ramin Ayanzadeh**, Mohammad Teshnehlab, and Saeid Setayeshi, 2007. An Optimal Architecture for Memetic Algorithms, *13th International Conference of Iranian Computer Society*, Kish Island. (in Persian)
46. **Ramin Ayanzadeh**, Hadi Gheiby, Yaghoub Moghaddas, and Kaveh Hassani, 2007. Fuzzy Aging in Memetic Algorithms, *Iranian National Symposium on Fuzzy Systems*, Ghaemshahr, Iran. (in Persian)
47. Hadi Gheiby, **Ramin Ayanzadeh**, Yaghoub Moghaddas, and Kaveh Hassani, 2007. Satellite Images Clustering Based on Fuzzy C-Mean and Genetic Algorithms, *Iranian National Symposium on Fuzzy Systems*, Ghaemshahr, Iran. (in Persian)
48. **Ramin Ayanzadeh**, Ehsan Shahamatnia, Mostafa Haghifam, and Maryam Babazadeh, 2006. Using Hybrid Strategy for Enhancing the Functionality of Genetic Algorithms, *5th National Conference on Basic Sciences*, Ghaemshahr, Iran. (in Persian)
49. Ehsan Shahamatnia, **Ramin Ayanzadeh** and Ahmad Habibi, 2006. Novel Approach for Bulk Data Processing Based on Multiprocessor Scheduling, *5th National Conference on Basic Sciences*, Ghaemshahr, Iran. (in Persian)
50. Ehsan Shahamatnia, **Ramin Ayanzadeh** and Ahmad Habibi, 2006. Task Scheduling in Multiprocessor Systems Based on Dynamic Genetic Algorithms, *5th National Conference on Engineering Sciences*, Qazvin, Iran. (in Persian)

PREPRINTS

1. **Ramin Ayanzadeh**, Milton Halem, and Tim Finin, 2019. SAT-based compressive sensing. *arXiv preprint* arXiv:1903.03650.
2. **Ramin Ayanzadeh**, Ahmad Mousavi, Milton Halem, and Tim Finin, 2019. Quantum annealing based binary compressive sensing with matrix uncertainty. *arXiv preprint* arXiv:1901.00088.

BOOK CHAPTERS

1. **Ramin Ayanzadeh** and Milton Halem, 2022. "A New kind of Knowledge Discovery". In: *Convergence: Artificial Intelligence and Quantum Computing: Social, Economic, and Policy Impacts*. John Wiley & Sons, 2022.

POSTERS

1. **Ramin Ayanzadeh**, Poulami Das, Swamit Tannu, and Moinuddin Qureshi, 2022, October. Improving the Fidelity of Quantum Annealers by Injecting Controlled Perturbations. *In MICRO55/CWIDCA*.
[Best Presentation Award]
2. Narges Alavisamani, Poulami Das, **Ramin Ayanzadeh**, and Moinuddin Qureshi, 2022, October. A Reinforcement-Learning-Based Framework for Designing Robust Quantum Circuit. *In MICRO55/CWIDCA*.
3. **Ramin Ayanzadeh**, 2019. Compiling for Quantum Annealers. *In 2019 ACM Richard Tapia Celebration of Diversity in Computing*.
[2nd place in 2019 ACM Graduate Student Research Competition (SRC)]
4. **Ramin Ayanzadeh**, Milton Halem, and Tim Finin, 2019, December. Compressive geospatial analytics. *In 2019 AGU Fall Meeting*.
5. **Ramin Ayanzadeh**, Milton Halem, and Tim Finin, 2018, December. Solving hard SAT instances with adiabatic quantum computers. *In 2018 AGU Fall Meeting*.
6. **Ramin Ayanzadeh**, 2018, February. Quantum artificial intelligence for natural language processing applications. *In 49th ACM Technical Symposium on Computer Science Education*.

TEACHING
EXPERIENCE

- **Quantum Computers Programming** Spring'20
 - CMSC 491/691 at UMBC
 - **Instructor** for combined session of 10 senior undergraduate and 13 graduate students
- **Learning Automata** Fall'10 – Spring'11
 - Khajeh Nasir Toosi University of Technology, Tehran, Iran
 - **Teaching Assistant** for 20 graduate students
- **Learning Automata** Fall'10 – Spring'11
 - Science and Research Azad University, Tehran, Iran
 - **Teaching Assistant** for 20 graduate students
- **Technical Document Presenting Methods** Spring'09 – Spring'10
 - Shahr-e Qods Branch of Azad University, Tehran, Iran
 - **Instructor** for 120 junior undergraduate students
- **Bachelor of Science Final Project** Spring'09 – Spring'10
 - Shahr-e Qods Branch of Azad University, Tehran, Iran
 - **Instructor** for 15 senior undergraduate students
- **Special Topics in Computer Engineering, Advances in C#.NET** Fall'08 – Spring'10
 - Shahr-e Qods Branch of Azad University, Tehran, Iran
 - **Instructor** for 120 junior undergraduate students
- **File Systems** Fall'08 – Spring'10
 - Shahr-e Qods Branch of Azad University, Tehran, Iran

- **Instructor** for 60 sophomore undergraduate students

- **Artificial Intelligence** Fall'09
 - Shahr-e Qods Branch of Azad University, Tehran, Iran
 - **Instructor** for 90 senior undergraduate students
- **Computer Science I, C/C++ Programming** Spring'09, Fall'09
 - Shahr-e Qods Branch of Azad University, Tehran, Iran
 - **Instructor** for 60 freshman undergraduate students
- **Soft Computing** Spring'09
 - Tabriz Azad University, Tabriz, Iran
 - **Teaching Assistant** for 15 graduate students
- **Artificial Intelligence** Spring'06
 - Tabriz Azad University, Tabriz, Iran
 - **Teaching Assistant** for 40 senior undergraduate students

GUEST
LECTURES

- **A New Kind of Computing: Adiabatic Quantum Computers and Quantum Annealers** Spring'22
 - In Introduction to Quantum Computing at Georgia Tech (CS 4803/8803)
- **A New Kind of Computing: Adiabatic Quantum Computers, Quantum Annealers and Ising Processing Units** Spring'21
 - In Introduction to Quantum Computing at Georgia Tech (CS 4803/8803)

RESEARCH &
WORK
EXPERIENCE

- **Postdoctoral Fellow**, Georgia Tech, Atlanta, GA Nov'20 – Present
 - Memory Systems Lab, Supervisor: Moinuddin Qureshi
- **Research Assistant**, UMBC, Baltimore, MD Aug'16 – Dec'19
 - Center for Accelerated Real Time Analytics, Supervisor: Milton Halem
- **Research Assistant**, UMBC, Baltimore, MD Aug'13 – Dec'19
 - eBIQUNITY Lab, Supervisor: Tim Finin
- **Research Intern**, Boston Scientific, Corp. Research, Marlborough, MA Nov'18 – Feb'19
 - Supervisor: Ron Lancaster
- **Research Intern**, University of Maryland, Baltimore, MD Jun'17 – Aug'17
 - Center for Shock, Trauma and Anesthesiology Research, Supervisor: Shiming Yang

- **Research Associate**, Bojnord Branch of Azad University, Bojnord, Iran Sep'11 – Dec'11
- **Research Associate**, Parand Azad University, Tehran, Iran Oct'10 – Dec'11
- **Vice President of R&D**, Armangar Pardazesh Eng. Co., Tehran, Iran Jan'10 – Dec'11
- **Research Assistant**, Science and Research Azad University, Tehran, Iran Sep'07 – Dec'11
- Complex Systems Lab
- **Principal Investigator**, Young Researchers Club, Science and Research Azad University, Tehran, Iran Jul'09 – May'11
- **Research Associate**, Saveh Azad University, Saveh, Iran Sep'09 – Aug'10
- **Research Associate**, Space Research Institute, Tehran, Iran Sep'07 – Dec'09
- **Sr. Software Engineer**, Armangar Pardazesh Eng. Co., Tehran, Iran Sep'06 – Dec'09
- **Research Assistant**, Tabriz Azad University, Tehran, Iran May'05 – Aug'06
- **Software Engineer**, Jubin Studio Eng. Co., Tabriz, Iran May'03 – May'06

MENTORING

- **Ph.D. Students: Project-Based**
 - Narges Alavisamani (PhD student, Georgia Tech)
 - Ajinkya Borle (Lecturer, UMBC)
 - Ahmad Mousavi (PhD candidate, UMBC, First employment: UMN–Twin Cities)
 - Hadis Dashtestani (PhD student, UMBC, First employment: NIH)
 - Dorsa Ziaei (PhD student, UMBC, First employment: NIH)
 - Elaheh Raisi (PhD student, Virginia Tech, First employment: LinkedIn)
- **Undergraduate and Masters: Project-Based**
 - Nipun Ramagiri (Master student, UMBC, First employment: IBM)
 - Nasrin Attaran (Master student, UMBC, First employment: BlueHalo)
 - Mentored over 50 undergraduate students since 2006
- **Group Mentoring**
 - Mentored a team of 12 students with different types of disabilities for *Idea Competition* at 2019 USBLN Rising Leadership Academy, sponsored by Walgreens
 - Mentored a team of 10 students with different types of disabilities for *Idea Competition* at 2018 USBLN Rising Leadership Academy, sponsored by Boeing

- **Mentoring Students with Different Types of Disabilities**

- Actively participating in mentoring students from Access-STEM & Access-Computing
- Mentored three master students
- Mentored over 10 undergraduate students to navigate to graduate school

SERVICE

- Program Committee Member, HPCA-2024: IEEE International Symposium on High Performance Computer Architecture, March 2024, Edinburgh, Scotland, UK.
- Reviewer for Nonlinear Processes in Geophysics (NPG), 2023
- Invited Attendee, CRA/CCC Workshop on “5 Year Update to the Next Steps in Quantum Computing”, May 2023, Washington, DC
- Invited Attendee, CRA’s Workshop on “Accessible Technology for All”, February 2023, Washington, DC
- Reviewer for Nature/Scientific Reports, 2020 – 2021
- Reviewer for Quantum Science and Technology, 2020
- Panelist of Computing Students with Disabilities for ACM SIG-CSE 2018
- Reviewer for 15th Iranian Student’s Conference on Electrical Engineering 2013
- Reviewer for 14th Iranian Student’s Conference on Electrical Engineering 2012
- Reviewer for 13th Iranian Student’s Conference on Electrical Engineering 2011
- Reviewer for 12th Iranian Student’s Conference on Electrical Engineering 2010
- Scientific Committee Member and Reviewer for 2nd National Conference on Information Technology, Iran 2009
- General Chair for Seminar on Artificial Life, Iran 2006

MEMBERSHIPS &
AFFILIATIONS

- ACM SIGARCH
- IEEE
- National Federation of the Blind
- Foundation Fighting Blindness
- Memory Systems Lab, Georgia Tech
- Google Lime Scholar
- Meyerhoff Graduate Fellow
- eBiquity Research Group, UMBC
- CARTA (Center for Accelerated Real Time Analytics), UMBC
- Intel® AI Academy
- USBLN Rising Leader Academy

LANGUAGE
PROFICIENCY

English, Persian/Farsi, Azerbaijani