

Armin Ahmadkhaniha

| Quantum Software Developer
(PhD student at Computer Science)

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h-index 4 – 74 Citations – 5 Publications

Education Background

McMaster University, Hamilton, Ontario, Canada

PhD Student, Computer Science

Sep 2024 – Present

Research: Development of state-of-the-art Quantum Algorithms and Quantum Software

University of Tehran, Tehran, Iran

Master of Electrical Engineering, Micro-Nano Electronics, GPA: 18.18/20

Sep 2021 – Jun 2024

Thesis: Survey of DQNN and its applications

(NISQ compatible error correction using modified DQNN)

Supervisors: Dr. H. Aghababa / Dr. M. Kolahe Douz

Imam Khomeini International University (IKIU), Qazvin, Iran

Bachelor of Electrical Engineering (Telecommunication), GPA: 15.15/20

Sep 2016 – Feb 2021

Thesis: Microstrip Fed Log-Periodic Balun Printed Dipole (Grade=18.5/20)

Supervisor: Dr. S. Jarchi

Extra-Thesis: Enable-based Quantum Teleportation scheme

Publications / Projects

Nov 2023: NISQ Compatible Error Correction of Quantum Data using Modified DQNN (Phys. Rev. A)

Aug 2023: Performance Analysis of the Hardware-Efficient Quantum Search Algorithm (Springer)

Sep 2023: Enhancing Quantum Teleportation: An Enable-Based Protocol (Springer)

Jul 2022: Bidirectional Quantum Teleportation using $2n$ Bell states (Springer)

May 2023: Efficient controlled quantum broadcast protocol using $6n$ -qubit cluster state (Springer)

Dec 2024– present: Constant time sampling in Learning with Error (LWE) problem and cryptographic scheme

Mar 2025– present: Real transform (Hartley, Sin and Cos transform) on Quantum Computer

Mar 2025– present: Quantum Graph Convolutional Neural Networks (QGCN) for unsupervised learning on Artificial Genom

Mar–Jul 2023: Survey of QGAN and its applications (Role: Mentor)

Mar–Jul 2023: Survey of Quantum Image Processing (NEQR, FRQI, edge detection) (Role: Mentor)

Mar–Apr 2020: Image processing using MATLAB

Jun–Sep 2021: Microstrip antenna design using CST

Jun–Jul 2021: SIW antenna design using HFSS

Honors and Awards

Feb 2023: Ranked 3rd among Nanoelectronics MSc students, University of Tehran

Jul 2021: Top 1% among 30,000 participants of National Entrance Exam in Electrical Engineering (64th in Micro-Nano Electronics)

Sep 2021: Full MSc Scholarship in Micro-Nanoelectronics, University of Tehran

Sep 2016: Full BSc Scholarship in Electrical Engineering, IKIU

Languages

English: Fluent (TOEFL 97: Writing 27, Speaking 22, Listening 25, Reading 23)
French: B1
Persian: Native

Work Experience

Research Assistant.....		
Mcmaster University		
RA		2024–present
Crypto-Quantum Lab		
University of Tehran		
RA		2022–2024
Quantum Computations and Comm. Lab (QCCL). Mentored 30+ students. Instructor: Qiskit/PennyLane survey. Published 5 papers		
Teaching Assistant.....		
Mcmaster University		
TA		2024
Applied Cryptography		
Mcmaster University		
TA		2025
Performance Analysis of Computer Systems		
University of Tehran		
TA		2022–2024
Quantum Machine Learning, Quantum Computing, Quantum Optics, Solid State Devices		
College of Farabi, University of Tehran		
TA		2022
Quantum Computing		
Research Mentor.....		
Qworld Organization, QIran Branch		
Board Member		2022–2024
Mentored projects on QGAN and Quantum Image Processing		
Course Instructor.....		
Sharif University of Technology, Resana Association		
Instructor		Aug–Sep 2023
QML Summer School (540 students, 97 graduates)		

Skills

Python, Matlab, C++, HTML, Javascript

References

Dr. Jake Doliskani, Assistant Prof., McMaster University (Email)
Dr. Hossein Aghababa, Associate Prof., University of Tehran (Email)
Dr. Mohammadreza Kolahdouz, Associate Prof., University of Tehran (Email)
Dr. Zahra Shaterzadeh Yazdi, Assistant Prof., University of Tehran (Email)