Curriculum Vitae – Khaled M. El-Wazan

Personal Information

Khaled M. El-Wazan
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Education

PhD in Computer Science (2021-Ongoing) *Aims and Objectives:* Design and implementation of optimization strategies for the development of quantum circuits.

Master's degree in Mathematics: Computer Science (Quantum Computations) from the University of Alexandria, Egypt (2015-2018). *Thesis advisers*: Prof. Ahmed Younes and Prof. Salah B. Doma. *Thesis title*: *Quantum Algorithms for Testing and Learning Boolean Functions.* Designing quantum algorithms for finding junta variables in a Boolean function provided as a black-box and learning certain Boolean functions.

Bachelor degree in computer science from the University of Alexandria, Egypt (2008-2012). *Thesis adviser*: Dr. Ashraf Elsayed. Thesis title: *Intelligent E-Learning Systems via Means of Computer Vision.*

Current Affiliations

Academy of Scientific Research and Technology(ASRT)

Department of Mathematics and Computer Science, Faculty of Science

Job experiences

2020 March → 2022 Worked on a funded research project by the *Academy of Scientific Research and Technology (ASRT)*. We were able to secure a fund from ASRT to continue our work on quantum circuit development and optimization. Our work was published in a Q2 journal, and can be found here doi: 10.3390/sym13101842.

2013 July → Present Employed as a research and assistant lecturer at Faculty of Science, Alexandria University, Egypt.

Tasks: includes academic research, tutor/mentor students, hand out assignments and grade papers, meet with students during office hours, help professors develop course plans, teach undergraduate courses and take attendance and record responses.

Courses: Discrete Structures, Structured Programming using C, Object Oriented Programming using Java, Data Structures using C++ , Algorithm Analysis and Design, Computational Complexity, Computer Architecture, Operating Systems Concepts and Design, Compiler Design and Construction,

Information Storage and Retrieval, Distributed Systems, Theory of Computation and Multimedia Systems and Applications.

2017 July → December 2020 Joined a research group at Alexandria University, Alexandria Quantum Computing Group.

2015 February → 2018 July Employed as a teaching assistant at Faculty of Engineering, Alexandria University, Egypt.

Tasks: includes tutor/mentor students, hand out assignments and grade papers, meet with students during office hours, help professors develop course plans, teach undergraduate courses and take attendance and record responses.

Courses: Multimedia Systems and Applications, Switching Theory.

Extracurricular activities

2014 October → 2016 August Coached Faculty of Science ACM teams to the final rounds at Egyptian Collegiate Programming Contest (ACM-ECPC).

Grants

2020 March → 2022 Worked on a funded research project by the *Academy of Scientific Research and Technology (ASRT), Grand number 6614*. Our work was published in a Q2 journal doi: 10.3390/sym13101842.

Published papers

Mohamed Osman, and Khaled El-Wazan. "Efficient Designs of Quantum Adder/Subtractor Using Universal Reversible Gate on IBM Q."Symmetry 13.10 (2021) doi: 10.3390/sym13101842.

Khaled El-Wazan, "A Quantum Algorithm for Finding Common Matches between Databases with Reliable Behavior,"Quantum Information Review, vol. 6, pp. 1-6 (2019) doi: 10.18576/qir/060101.

Reports

Khaled El-Wazan, "Measuring Hamming Distance between Boolean Functions via Entanglement Measure ,"pp. 1–12, 2019. [Online]. Available: 1903.04762.

Khaled El-Wazan, Ahmed Younes and Salah B. Doma, "A Quantum Algorithm for Testing Junta Variables and Learning Boolean Functions via Entanglement Measure,"pp. 1–15, 2017. [Online]. Available: 1710.10495.

Conference contributions

Khaled El-Wazan, Ahmed Younes and Salah B. Doma, "A Quantum Algorithm for Testing Juntas in Boolean Functions,"*One day conference of Quantum Computer and Quantum Information*, Faculty of Science, Alexandria University, Egypt, 2016. [Online]. Available: 1701.02143.

Training Courses and Certificates

- Ethical Conduct and Code of Ethics (IBCT-FLDC).
- Global Databases Usage (IBCT-FLDC).
- Research Methods (IBCT-FLDC).
- Presentation Skills (IBCT-FLDC).
- Rights and Duties of University Staff Assistants (IBCT-FLDC).
- Experimental Design and Statistical Analysis Systems (IBCT-FLDC).

- Japanese Language Proficiency (JF).

Computer skills

Operating systems Advanced experience with most flavors of Linux, *e.g.* Arch, Ubuntu, Mint and Debian. Experienced with Microsoft Windows and Mac OSX to some extent.

Servers and databases Apache2, NoSQL, GlassFish, MySQL, ESXI Hypervisor, VMWare vSphere, Apache Hadoop and Apache Pig.

Programming, scripting and markup languages Python, Bash (daily) and JavaScript. LaTeX, PHP, HTML, Octave (Often). C, C++, C sharp, Java SE and EE. Android SDK, Flutter SDK, Nodejs, FORTRAN and Pig Latin.

Language skills

My mother tongue is Arabic, but almost everything I write is in English, both in connection to computers in general on my blog Quantum Algorithms and Quantum Computations and in academic and scientific work. **Arabic**: Native tongue. **English**: Intermediate. **Japanese**: Beginner level (JLPT N5 Certified).