

## Asst. Prof. AMMAR DAŞKIN

### Personal Information

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### Education Information

Doctorate, Purdue University, Dept. Of Computer Science, United States Of America 2009 - 2014

Postgraduate, Purdue University, dept. of computer science, United States Of America 2009 - 2011

Undergraduate, Erciyes Üniversitesi, Bilgisayar Mühendisliği Bölümü, Turkey 2002 - 2007

### Dissertations

Doctorate, Quantum Circuit Design Methods and Applications, Purdue University, Computer Science, Computer Science, 2014

### Academic Titles / Tasks

Assistant Professor, İstanbul Medeniyet Üniversitesi, Mühendislik Mimarlık Fakültesi, Bilgisayar Mühendisliği, 2015 - Continues

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **The quantum version of the shifted power method and its application in quadratic binary optimization**  
DAŞKIN A.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.28, no.4, pp.2088-2095, 2020 (Journal Indexed in SCI)
- II. **Context-aware quantum simulation of a matrix stored in quantum memory**  
DAŞKIN A., Bian T., Xia R., Kais S.  
QUANTUM INFORMATION PROCESSING, vol.18, no.12, 2019 (Journal Indexed in SCI)
- III. **Quantum computing methods for electronic states of the water molecule**  
Bian T., Murphy D., Xia R., Daşkın A., Kais S.  
MOLECULAR PHYSICS, vol.117, pp.2069-2082, 2019 (Journal Indexed in SCI)
- IV. **A generalized circuit for the Hamiltonian dynamics through the truncated series**  
DAŞKIN A., Kais S.  
QUANTUM INFORMATION PROCESSING, vol.17, no.12, 2018 (Journal Indexed in SCI)
- V. **Direct application of the phase estimation algorithm to find the eigenvalues of the Hamiltonians**  
DAŞKIN A., Kais S.  
CHEMICAL PHYSICS, vol.514, pp.87-94, 2018 (Journal Indexed in SCI)
- VI. **An ancilla-based quantum simulation framework for non-unitary matrices**  
DAŞKIN A., Kais S.  
QUANTUM INFORMATION PROCESSING, vol.16, no.1, 2017 (Journal Indexed in SCI)

- VII. **Obtaining a linear combination of the principal components of a matrix on quantum computers**  
 DAŞKIN A.  
 QUANTUM INFORMATION PROCESSING, vol.15, no.10, pp.4013-4027, 2016 (Journal Indexed in SCI)
- VIII. **Quantum eigenvalue estimation for irreducible non-negative matrices**  
 Daskin A.  
 INTERNATIONAL JOURNAL OF QUANTUM INFORMATION, vol.14, no.1, 2016 (Journal Indexed in SCI)
- IX. **Reducing the number of ancilla qubits and the gate count required for creating large controlled operations**  
 Brown K., Daşkin A., Kais S., Dowling J. P.  
 QUANTUM INFORMATION PROCESSING, vol.14, no.3, pp.891-899, 2015 (Journal Indexed in SCI)
- X. **Multiple network alignment on quantum computers**  
 Daskin A., Grama A., Kais S.  
 QUANTUM INFORMATION PROCESSING, vol.13, no.12, pp.2653-2666, 2014 (Journal Indexed in SCI)
- XI. **Quantum random state generation with predefined entanglement constraint**  
 Daşkin A., Grama A., Kais S.  
 INTERNATIONAL JOURNAL OF QUANTUM INFORMATION, vol.12, no.5, 2014 (Journal Indexed in SCI)
- XII. **A universal quantum circuit scheme for finding complex eigenvalues**  
 Daskin A., Grama A., Kais S.  
 QUANTUM INFORMATION PROCESSING, vol.13, no.2, pp.333-353, 2014 (Journal Indexed in SCI)
- XIII. **Universal programmable quantum circuit schemes to emulate an operator**  
 Daskin A., Grama A., Kollias G., Kais S.  
 JOURNAL OF CHEMICAL PHYSICS, vol.137, no.23, 2012 (Journal Indexed in SCI)
- XIV. **Quantum circuit design for solving linear systems of equations**  
 Cao Y., Daskin A., Frankel S., Kais S.  
 MOLECULAR PHYSICS, vol.110, pp.1675-1680, 2012 (Journal Indexed in SCI)
- XV. **Decomposition of unitary matrices for finding quantum circuits: Application to molecular Hamiltonians**  
 Daskin A., Kais S.  
 JOURNAL OF CHEMICAL PHYSICS, vol.134, no.14, 2011 (Journal Indexed in SCI)
- XVI. **Group leaders optimization algorithm**  
 Daskin A., Kais S.  
 MOLECULAR PHYSICS, vol.109, no.5, pp.761-772, 2011 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **QUANTUM SPECTRAL CLUSTERING THROUGH A BIASED PHASE ESTIMATION ALGORITHM**  
 DAŞKIN A.  
 TWMS JOURNAL OF APPLIED AND ENGINEERING MATHEMATICS, vol.10, no.1, pp.24-33, 2020 (Journal Indexed in ESCI)
- II. **A quantum implementation model for artificial neural networks**  
 Daskin A.  
 Quanta, vol.7, no.1, pp.7-18, 2018 (Refereed Journals of Other Institutions)

## Refereed Congress / Symposium Publications in Proceedings

- I. **A Simple Quantum Neural Net with a Periodic Activation Function**  
 DAŞKIN A.  
 IEEE International Conference on Systems, Man, and Cybernetics (SMC), Miyazaki, Japan, 7 - 10 October 2018, pp.2887-2891

- II. **Quantum IsoRank: Efficient Alignment of Multiple Protein-Protein Interaction Networks**  
DAŞKIN A.  
Uluslararası Bilgisayar Bilimleri ve Mühendisliği Konferansı (UBMK 2016), Tekirdağ, Turkey, 20 October 2016, pp.81-88
- III. **Quantum Circuit Implementations of the Direct Sum of Unitary Matrices**  
Daşkın A.  
International Conference on Quantum Science and Applications, Eskişehir, Turkey, 25 May 2016, pp.79
- IV. **Decomposition of unitary matrices for finding quantum circuits**  
Daşkın A., Kais S.  
ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, Anaheim, Ca, United States Of America, 27 March 2011, vol.241, pp.1

## Supported Projects

Daşkın A., TUBITAK Project, Kuantum Hesaplamanın Bioinformatik ve Kimyadaki Problemlere Uygulanması, 2016 - 2018  
DAŞKIN A., Project Supported by Higher Education Institutions, Üniter Matrislerin Toplamlarının Kuantum Devreleri ile Gerçekleştirilmesi, 2016 - 2016

## Citations

Total Citations (WOS):95

h-index (WOS):5