



Dr. TALAL BONNY

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- (@ King Abdullah University for Science and Tech.):
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- Date of Birth:** 15.05.1977
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Area of Research

- Embedded and Digital System
- Code Compression and Memory Optimization
- Chaotic Oscillators System Realization and Random bit Generation using FPGA
- Bioinformatics Development Algorithm
- Face Recognition and Image Edge Detection

Education

- 05/2004-06/2009:** **PhD in Computer Engineering/Science.**
From Karlsruhe University (TH) Karlsruhe-Germany.
Graduate Average (Excellent)
- 09/2000-05/2002:** **Master of Science in Computational Sciences in Engineering.**
From Technical University of Braunschweig-Germany
Ranking 1st top student in the University.
Graduate Average 1.3 (Excellent)
- 09/1995-06/1999:** **Bachelor in Automatic Control and Industrial Electronics.**
From Electrical and Electronic Engineering, University of Aleppo-Syria
Ranking 1st top student in the University.
Graduate Average 80% (Excellent)

Work Experience

- 01/2020-current** **Associate Professor (College of Engineering, department of electrical and computer engineering, Sharjah University, Sharjah - UAE)**
- 09/2013-12/2019** **Assistant Professor (College of Engineering, department of electrical and computer engineering, Sharjah University, Sharjah - UAE)**
- 2011-2012** **Assistant Professor (faculty of electrical and electronics engineering, department of computer engineering, Aleppo University, Aleppo - Syria)**
- Lead a team of engineers to develop the tools, experiments and the infrastructure required for new lab.
 - Select and purchase prototyping boards required for the academic and research purposes.
 - Lead a team of students to evaluate and implement innovative ideas.
 - Supervising the students in their master thesis and their student projects.
 - Monitoring and reviewing courses and programs for relevance and identify areas for improvement.
 - Teaching the following courses (**for more than 200 Students in the class**):
 - Computer Architecture and Organization.
 - Design of Logic Systems and Digital Circuits.
 - Hardware Description Language
 - Microprogramming
- 2009-2011** **Post-Doc (department of electrical engineering, King Abdullah University of Science and Technology (KAUST) , Thuwal - Saudi Arabia)**
- Publishing conference and journal papers in different research areas.

- Purchasing prototyping boards and equipments required for the research lab
- Supervising master and PhD students in deferent research fields

2004-2009 Research Scientist, design developer and lecturer (Institute of Embedded Systems, Karlsruhe University, Karlsruhe-Germany)

- Lead a team of students to evaluate and implement projects on FPGA boards.
- Publishing conference and journal papers in different research areas.
- Supervising master thesis students, student projects and internship students
- Delivering seminars in Code Compression.
- Supervising students in lab of designing Application Specific processors (German)
- Selecting and purchasing the prototyping boards required for the research purposes.
- Preparing the experiments and the infrastructure required for new lab "Designing Application Specific processors and supervising the lab students.
- Teaching the following courses for 5 years (each semester):
 - o Software Engineering
 - o SystemC

2002-2004 Hardware/Software developer (Institute of Computer and Communication Network Engineering, group of Spaceborne Data Processing Units. Braunschweig– Germany)

- Designing and implementing of SDRAM controller for high data rate memory system (100 MByte/s) in VHDL for Xilinx FPGAs.
- Designing layout and PCB of high data rate fiber optic transceiver system for the satellite project TerraSAR using ALTERA FPGA.
- Supervising students in lab of “Designing and implementing digital circuits using Computer-Aided Design tools”

2000-2002 Hardware/Software developer (Institute of Computer and Communication Network Engineering, group of Communication Networks. Braunschweig–Germany)

- Implementing of a VLSI model for Rijendael crypto algorithm (AES) in VHDL for ASIC and FPGAs.
- Using CAD tools like ModelSim and Synopsys to test and verify the AES crypto model.
- Designing and verifying hardware architecture of the Chinese Remainder Theorem (CRT) for coding and cryptography applications in VHDL for Xilinx.
- Developing a program for optimizing the coding channel of 3GPP mobile system in C language. The results were a part of an industry patent

Technical Skills

- Good knowledge in programming languages: BASIC, Visual Basic, Delphi, C, C++ / Visual C++.NET, Assembly Z-80 and Assembly 8086.
- Good knowledge in Matlab and Simulink
- Good knowledge in PLC (Programmable Logic Controller) and SCADA.
- Good knowledge in Microprocessor and Microcontrollers Design (AVR).
- Extensive knowledge in PCB and layout design (ORCAD, Protel, eagle...).
- Extensive knowledge in VLSI (Very Large Scale Integration).
- Extensive knowledge in VHDL (Very High speed Hardware Description Language).
- Extensive knowledge in Synthesization, Simulation and Computerizing tools

Research Activities

A. Institutional Research

Role	Title of research project	Fund	Year
Coordinator	Highly Efficient FPGA Based Sequence Alignment Techniques for Bioinformatics	20,000 AED	2013-2015
Member	Mixed Analog- Digital Smart Electronic Circuits and Systems	220,000 AED	2015-2016
Member	Operational Fund: Mixed Analog- Digital Smart Electronic Circuits and Systems	120,000 AED	2016-2017
Member	Operational Fund: Mixed Analog- Digital Smart Electronic Circuits and Systems	130,000 AED	2017-2018

B. Competitive inter-disciplinary Research Projects

Role	Title of research project	Fund	Year
Coordinator	Designing Customized Processor to Implement new Technique to Speed up the Database Sequencing Applications	80,000 AED	2016-present

C. Membership in Scientific Societies, Journals Editorial Boards or Papers Evaluation

No.	Society	Country
1	Member in the Institute of Electrical & Electronics Engineers IEEE,	USA
2	Editorial board member of International Journal of Computer & Software Engineering	<u>USA</u>
3	Editorial Board member of the 29 th conference on VLSI Design and 15 th conference on Embedded Systems	<u>USA</u>
4	Editorial Board member of the 8th International Engineering Education Forum (IFEE)	<u>UAE</u>
5	Reviewer in Journal of Circuits, Systems, and Computers	<u>USA</u>
6	Reviewer in Competitive Research Project, office of Vice Chancellor for Research and Graduate Studies, Sharjah University	<u>UAE</u>
7	Representative of the UOS in the UAE Graduate Research Conference UAEGSRC17 as Technical Program Committee member of Engineering and Science	<u>UAE</u>

D. Accepted Student Research Projects

Title of research project	Students Name	Activity	Year
The Intelligent Road System	- Taha Inhlawi - Mohamed Abdelsalam - Baraa Hakim	6 th United Arab Emirates Undergraduate Research Competition	April, 2018
The Brail System for Arabic Language	- Muhammad Abdul Samad - Hamzah Bamedhaf - Khaled Naqawa	My students got the first place Award in the “Sharjah Initiative for Design and Innovation”	March, 2015
The Smart Suit	- Ramy Khalifa - Malik S. Mohamed	My students got the second place Award in the “University of Wollongong UAE Software Tradeshow”	April, 2015

Awards/Honoring Certificates

2018	Best award for distinguished faculty member (2017/2018) in the area of “University and Community Service”	UoS
2018	Honoring by the Chancellor of the UoS for working hard to get the QS-STARS international universities ranking	UoS
2017	Honoring Certificate by the “UAE Think Science” Competition to work as a Judge	UAE
2018	Honoring by the Chancellor of the UoS for organizing the 2017 UAE Innovation Month	UoS
2016	Honoring by the Chancellor of the UoS for organizing the 2016 UAE Innovation Week	UoS
2015	Honoring by the Chancellor of the UoS for organizing the 2015 UAE Innovation Week	UoS
1995	Best student award of the first year	University of Aleppo-Syria
1996	Best student award of the second year	University of Aleppo-Syria
1997	Best student award of the third year	University of Aleppo-Syria
1998	Best student award of the fourth year	University of Aleppo-Syria
1999	Best student award of the fifth year	University of Aleppo-Syria

Training

Jan13 - Feb13	C++ / Visual C++.NET Training Course @ Alfatraining in Karlsruhe-Germany
Mar13 - Apr13	Project Management and Team Leading Training Course @ Alfatraining in Karlsruhe-Germany
May13 - Jun13	PLC, Bus system and WinCC Automation Training Course @ Alfatraining in Karlsruhe-Germany

Invited Talk/Lecture

- May 3rd 2011** Invited lecture for the students of Carnegie Mellon University in Qatar. The lecture titled “New Techniques to improve the performance of Bioinformatics sequence alignment”:
<http://sensors.kaust.edu.sa/news/drtalalbonnywasinvitedtogivelectureforthestudentsofcarnegiemellonuniversityinqatar>
- May 3rd 2011** Invited talk at King Fahd University of Petroleum and Minerals. The talk titled ”Research efforts on code compression for embedded systems”
- Mar 22nd 2010** Invited talk by the computer science department at Stanford University. The talk titled “Increasing the Embedded System Efficiency”
<http://sensors.kaust.edu.sa/news/drtalalbonnywasinvitedforatalkatstanforduniversity>

Reviewer (Journals and Conferences)

IEEE/ACM/Other Journals:

TVLSI, TCAD, ACM TODAES, ACM TECS, IEEE D&T, ZUST, Microprocessor and Microsystems.

IEEE/ACM Conferences:

DAC, DATE, ICCAD, CODES+ISSS, NOCS, PACT, ISLPED, RTSS, SiPS, ISCAS, ASPDAC, ICCD, IC-SAMOS.

Supervising Diploma Thesis, Senior Design, and Research Projects

2004-2009	Institute of Embedded Systems, Karlsruhe University, Karlsruhe-Germany		
2004	1	Retargetable code compression for embedded processors	Meiko Mueller
2005	2	Instruction Code Compression für VLIW-Prozessoren	Markus Hass
	3	Instruction Re-encoding for Better Code Compression in Embedded Processors	Elena Bengus
2006	4	Implementing an Interface to connect LCD to Prototyping FPGA Board	Peter Vohmann

	Institute of Embedded Systems, Karlsruhe University, Karlsruhe-Germany		
2007	5	Code compression for VLIW processors	Olivier Klousseh
	6	Hardware Implementation of Code Compression Technique	Meiko Mueller
2008	7	Maschinencodeübersetzung für ein MIPS basiertes Sensorknoten SoC	Sebastian Reiter
2009	8	Implementation of Huffman-Code decompressor for Xilinx FPGA	Zerong Yu

2011-2012	Computer Engineering Department, Aleppo University, Aleppo - Syria		
2011	1	Browsing Internet via Bluetooth	Mahmoud Sofan
	2	Security by Voice Recognition	Moustafa Almoustafa
	3	Smart home Using AVR Microcontroller	Abdo Alkhoder
	4	Designing Braille System for Arabic Language	Zakaria Alnahas

2013-Prsent	Electrical and Computer Engineering Department, University of Sharjah, Sharjah – UAE			
2013	1	The Smart Servant	AbdelAziz Obaid AlTenajji	U00017505
			Abdullah H A Ashour	U00017929
2014	2	The Smart Suit	Ramy Wafek Elsayed Khalifa	20710051
			Malik S. Mohamed Mohamed	U00018989
2014	3	Brail System for Arabic Language	Muhammad Abdul Samad	U00028152
			Hamzah Abdullah Hasan Bamedhaf	U00028879
			Khaled Naqawa	U00039916
2015	4	Serving Robot	Ali A. Ahmed Al Yammahi	U00018543
			Tarek I. Al Sibai	U00018985
			Abdulrahman M. Abdulateef	U00026812
2015	5	Taking Pictures Using The Eye Blink	Mahmoud Mohamed Hammame	u00027367
			Hamza Mohammad Abubaker	u00027400
			Mohammed J. M. Shehada	u00029167

2015	6	Visual Typer for the Handicapped	Maysa Ahmed Karar Omar	U00028723
			Qamar Mazen Zaher	U00028848
			Ayah Mohamad El-Issa	U00030888
2016	7	Drone Autopilot System	Tariq Essam Al Shoura	U00035277
			Sanad Ahmad Abbas Abbas	U00035186
			Babiker Y. Ahmed Abdalla	U00032957
	8	Skyscraper Cleaner Autonomous Robot	Mohamad Joud Waddah Salem	U00036338
			Ahmed KhalfanAlqaydi	U00039002
			Ali Salim El Rifai	U00037033
2017	9	Smart Accident Detector	Hanan Ibrahim Alzarooni	U00041252
			Maryam Hossein Tangeish	U00040492
			Razan Ossama Alnajjar	U00043814
	10	Intelligent Door Lock for Home Security	Ayesha Ibrahim Almarzooqi	U00033445
			Hamda Mohammad Alsharif	U00038412
			Mariam Mohamed Al marzouqi	U00036773
	11	Sleep Apnea Detection and Monitoring System	Fatima Hassan Mohammed Jalal	U00042278
			Meiaad Ahmed Alsereidi	U00038844
			Sarah Ahmad Alkayali	U00039684
2018	12	Secure IoT Home Safe	Fawzy Mowakeh	U14110978
			Kinan Tannous	U14111331
			Ridhawan Al Debsi	U14110128
	13	The Intelligent Road System	Taha Nihlawi	U14111742
			Mohammed Abdelsalam	U14111203
			Baraa Hakim	U14111216

Teaching Record

Institution name, city & country	Courses Taught	From <i>dd/mm/yy</i>	To <i>dd/mm/yy</i>	Full-time or part- time	Position held
College of Engineering, Department of Electrical and computer Engineering, University of Sharjah, Sharjah - UAE	- Microcontroller Based Design - Microcontroller Based Design Lab - Real Time System Design	1/09/2013	present	Full time	Assistant Professor

	<ul style="list-style-type: none"> - Real Time Embedded System (Master) - Discrete Mathematics for Engineering - Reconfigurable Computing - Circuit Analysis 1 - Circuit Analysis 1 Lab - Fundamentals of Electronic Circuit Lab 				
Electrical and Electronics Engineering Faculty, Aleppo University, Aleppo - Syria	<ul style="list-style-type: none"> - Computer Architecture and Organization - Hardware Description Language - Design of Logical Systems and Digital Circuits - Microprogramming - Programming Language 	15/09/2011	30/07/2012	Full time	Assistant Professor
Electrical Engineering Department, King Abdullah University of Science and Technology (KAUST), Thuwal - Saudi Arabia	Invited talks in Embedded System and Bioinformatics	01/09/2009	30/08/2011	Part time	Post-doc
Embedded System Department, Karlsruhe University, Karlsruhe - Germany	<ul style="list-style-type: none"> - Software Engineering - SystemC 	15/09/2004	30/05/2009	Full time	Researcher

Teaching Interest

- CS 101: Introduction to Computers
- CS 102 Introduction to Computer Concepts
- CS 104: Fundamentals of Computer Science
- CS 121: Introduction to Programming
- CS 213: Computer Architecture and Organization
- CS 351: Software Engineering
- ECE 102L Computer Programming and Problem Solving
- ECE 150: Introduction to Switching and Logic Design
- ECE 200: Microprocessor Based System Design
- Hardware Description Language (VHDL)
- SystemC

Administrative Work

No.	Activity	Date	
		From	Till
1	Representative of the college of Engineering in the Office of University International Relations and Ranking	October, 2017	Present
2	Chair of the Employer relations sub-committee in the Office of University International Relations and Ranking	October, 2017	Present
3	Chair and organizer of the UAE Innovation Month 2018	February 15, 2018	February 21, 2018
4	Representative of the College of Engineering in the Development of Innovation Workshop	October 9, 2017	October 11, 2017
5	Chair and organizer of the UAE Innovation Week 2016	November 22, 2016	November 27, 2016
6	Representative of the UOS in the UAE Graduate Research Conference UAEGSRC17 as Technical Program Committee member of Engineering and Science	March 20, 2017	March 21, 2017
7	Member in University Campus Sustainability Committee	November 2016	June 2107
8	Chair and organizer of the UAE Innovation Week	November 22, 2015	November 27, 2015
9	Representative of the UOS in the UAE Graduate Research Conference UAEGSRC16 as Technical Program Committee member of Engineering and Science	April 27, 2016	April 28, 2016
10	Representative of the college of Engineering in the community Affairs Workshop	March 3, 2016	March 3, 2016
11	Chair of the College of Engineering Website:	2016	2017
12	Organizing Arduino Microcontroller Workshop	February 28 2016	February 28 2016
13	Organizing booth in Expo Dubai for the disability projects from the UOS	February 9, 2016	February 9, 2016
14	Organizer of a workshop with Ministry of education with our Innovative students in the UOS	February 23, 2016	February 23, 2016
15	Organizing the visit from Public Work Ministry visitors to give presentation at UOS	October 10, 2015	October 10, 2015

16	Organizing the visit from District and Villages visitors to give presentation at UOS	November 23, 2015	November 23, 2015
17	Member in the Competitive Research Project evaluation committee , office of Vice Chancellor for Research and Graduate Studies, Sharjah University	March 2, 2015	March 2, 2015
18	Member in the Specialty group of “Digital and Computer Systems”	2014/2015	2014/2015
19	Member of Curriculum Committee	2014/2015	2014/2015
20	Coordinator of Exhibitions Committee	2014/2015	2014/2015

Media and Coverage

No	Activity	Links	Date
1	I had live TV interview by Sharjah TV about the Innovation week I organized in the Planetarium Center 2018	https://www.youtube.com/watch?v=VVz04cQyezk&t=139s	February 15, 2018
2	I had two articles published in Al-Khalij Newspaper about my organization of the Innovation Week in the Sharjah Expo Centre 2016		November 23 and 24 2016
3	I had live TV interview by Sharjah TV about the Innovation week I organized in the UOS	https://www.youtube.com/watch?v=s2SN328JPgw&index=295&list=PLkfwTtKgcCOKBEkY-925XanpVN_Ezlm	November 24, 2015
4	I had two articles published in Al-Khalij Newspaper about my organization of the Innovation Week	http://www.alkhaleej.ae/alkhaleej/page/409547b8-fca1-4b66-a9e6-1d23c18ca72a	November 23 and 24 2015
5	I had 3 TV interviews by Sharjah TV about the SDP projects which I am supervising		May, 2015

Publications

Conferences

[C.24] O Kaziha, T Bonny, **A Convolutional Neural Network for Seizure Detection**, The 3rd IEEE International Conference on Engineering Innovations in Healthcare, Dubai, UAE. February 2020

[C.23] A UI Haq, T Bonny, **Cancer Transcriptome Analysis with RNA-Seq Using Quantum K-means Clustering Algorithm**, The 3rd IEEE International Conference on Engineering Innovations in Healthcare, Dubai, UAE. February 2020

[C.22] O Kaziha, T Bonny, **A Comparison of quantized convolutional and LSTM recurrent neural network models using MNIST**, IEEE International Conference on Electrical and Computing Technologies and Applications. Ras Al Khaimah, UAE. November 2019

[C.21] F Almutairi, T Bonny, **New Image Encryption Algorithm Based on Switching-type Chaotic Oscillator**, IEEE International Conference on Electrical and Computing Technologies and Applications. Ras Al Khaimah, UAE. November 2019

[C.20] N Tahoun, A Awad, T Bonny, **Smart Assistant for Blind and Visually Impaired People**, IEEE International Conference on Advances in Artificial Intelligence, Istanbul. Turkey November 2019

[C.19] Waleed Obaid, Talal Bonny, and A.-K. Hamid. **“FPGA Reconfigurable UWB CPW Bow-Tie Aperture Antenna for Wi-Fi Applications (4.9 GHz) by Rotating Slots”**. In IEEE International Conference On Communications, Signal Processing, and Their Applications. American University of Sharjah, UAE. March 2019.
<https://ieeexplore.ieee.org/document/8713645>

[C.18] Mohamed Bassem and Talal Bonny. **“IoV Road Safety: Vehicle Speed Limiting System”**. In IEEE International Conference On Communications, Signal Processing, and Their Applications. American University of Sharjah, UAE. March 2019.
<https://ieeexplore.ieee.org/document/8713713>

[C.17] Talal Bonny, **Accuracy/Speed Trade-off Technique for Dynamic Programming Based Algorithms**, IEEE 5th International conference on Electronic Devices, Systems and Applications (ICEDSA), Ras Al Khaimah, United Arab Emirates. December 2016

[C.16] M Basel Almourad, Mohammed Hussain, Talal Bonny, **An Algorithm for Inferring Big Data Objects Correlation Using Word Net**, Elsevier Procedia Computer Science, 2016

[C.15] Talal Bonny and Bassel Soudan, **Computation Time Reduction to Speed-up the Database Searching Process**, IEEE 45th International Symposium on Multiple-Valued Logic (ISMVL 2015), Waterloo, Canada. May 2015

[C.14] Talal Bonny and Bassel Soudan, **High speed database sequence comparison**, IEEE International Conference on Soft Computing and Software Engineering (SCSE'15), University of California at Berkeley (UC Berkeley), USA. March, 2015.

[C.13] Talal Bonny and Bassel Soudan, **Filtering Technique for High Speed Database Sequence Comparison**, IEEE International Conference on Semantic Computing (ICSC 2015), Anaheim, California, USA. February 2015.

[C.12] M. Sammer Srouji, Talal Bonny, Jörg Henkel, **High-speed Encoding/Decoding Technique for Reliable Data Transmission in Wireless Sensor Networks**, IEEE 11th International Conference on Sensing, Communication, and Networking (SECON '14), Singapore, 30 June 2014



[C.11] Talal Bonny and Khaled Salama, “**ABS: Sequence Alignment By Scanning**” in the 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'11), on August 30 - September 3, 2011. Boston, MA, USA



[C.10] Talal Bonny and Khaled Salama, “**Fast Global Sequence Alignment Algorithm**” in the Asilomar Conference on Signals, Systems, and Computers to be held in PACIFIC GROVE, CA, in November 6-9th, 2011



[C.9] M. Affan Zidan, Talal Bonny and Khaled N. Salama, **High Performance Technique for Database Applications Using a Hybrid GPU/CPU Platform**. Great Leak Symposium on VLSI, May, 2011.



[C.8] Talal Bonny, M. Affan Zidan, and Khaled N. Salama: **An Adaptive Hybrid Multiprocessor Technique for Bioinformatics Sequence Alignment**. The 5th Cairo International Conference on Biomedical Engineering Conference, (**CIBEC'10**), Decemebr, 2010.

[C.7] Talal Bonny and Jörg Henkel:



LICT: Left-uncompressed Instructions Compression Technique to Improve the Decoding Performance of VLIW Processors.

In 46th ACM/EDA/IEEE Design Automation Conference (**DAC09**), Pages: 903-906, San Fransisco CA, USA, July, 2009.



[C.6] Talal Bonny and Jörg Henkel:

"FBT: Filed Buffer Technique to Reduce Code Size for VLIW Processors". 26th IEEE/ACM International Conference on Computer-Aided Design (**ICCAD'08**), Pages: 549-554, San Jose CA, USA, November, 2008



[C.5] Talal Bonny and Jörg Henkel:

"Instruction Re-encoding Facilitating Dense Embedded Code" IEEE/ACM Proc. of Design Automation and Test in Europe Conference (**DATE'08**), Pages: 770-775, Munich, Germany, 2008.



[C.4] Talal Bonny and Jörg Henkel:

"Instruction Splitting for Efficient Code Compression". ACM/EDA/IEEE Design Automation Conference (**DAC'07**), Pages: 646-651, San Diego CA, USA, June 2007



[C.3] Talal Bonny and Jörg Henkel:

"Efficient Code Density Through Look-up Table Compression". IEEE/ACM Proc. of Design Automation and Test in Europe Conference (**DATE'07**), Pages: 809-814, Nice, France, April 2007



[C.2] Talal Bonny and Jörg Henkel, **"Using Lin-Kernighan Algorithm for Look-up Table Compression to Improve Code Density"**, ACM/IEEE 16th, Great Lakes Symposium on VLSI (**GLSVLSI'06**), Pages: 259-265, Philadelphia, USA, April 2006.

[C.1] W. Adi, F. Kriaa, M. Ben Aoun, T. Bonny, **"Mobile Channel Optimized Low-Rate b-Adjacent Code"**, 4th International ITG Conference on Source and Channel Coding, Berlin, January 2002.

Patents

[P.2] Z Affan, T. Bonny and K. Salama:

"Adaptive Processing for Sequence Alignment", issued July 19th.,2011, US Patent US9747413B2 US Grant, Aug. 2017

[P.1] W. Adi, F. Kriaa, M. Ben Aoun, T. Bonny:

"Verfahren zur Kanalkodierung von TFCI-Bits 1.28 Mcps TDD-Mode im UMTS", issued October 10th.,2000, Siemens No. 2000E19640DE

Journals

[J.18] Talal Bonny and Abrar Ul Haq. “Emulation of High-Performance Correlation Based Quantum Clustering Algorithm for two-dimensional Data on FPGA”, *Quantum Information Processing* 19(6), April 2020. (**Impact Factor: 2.222**) DOI: [10.1007/s11128-020-02683-9](https://doi.org/10.1007/s11128-020-02683-9)

[J.17] Talal Bonny and Mohamed Abdelsalam. “Autonomous Navigation of UAV based on Android Smartphone”, *International Journal of Advanced Computer Science and Applications* 10 (11), November 2019.

[J.16] Talal Bonny, Tamer Rabie, Mohammed Baziad, and Walid Balid. “SHORT: Segmented Histogram Technique for Robust Real-Time Object Recognition”, *Journal of Multimedia Tools and Applications* (**Impact Factor: 2.101**), June 2019.

[J.15] Tamer Rabie, Mohamed Baziyad, **Talal Bonny**, and Raouf Fareh. “Toward a Unified Performance Metric for Benchmarking Steganography Systems”, *Journal of Circuits, Systems and Computers* (**Impact Factor: 0.59**), April 2019.

Journals

[J.14] Talal Bonny and Qasim Nasir, “Clock Glitch Fault Injection Attack on an FPGA-based Non-autonomous Chaotic Oscillator”, *Journal of Nonlinear Dynamics* (**Impact Factor: 4.604**), March 2019.

[J.13] Saif Al Aani, **Talal Bonny**, Shadi Hasan, Nidal Hilal. “Can machine language and artificial intelligence revolutionize process automation for water treatment and desalination?”. *Journal of Desalination* (**Impact Factor: 6.035**). February 2019.

[J.12] Talal Bonny, R. Al Debsi, B. Al-Murad, “Time Efficient Segmented Technique for Dynamic programming Based Algorithms”, *Journal of Circuits, Systems and Computers* (**Impact Factor: 0.59**), January 2019.

[J.11] Talal Bonny, “Heterogeneous HW/SW FPGA-Based Embedded System for Database Sequencing Applications” *International Journal of Advanced Computer Science and Applications*, 9(10), 2018. <http://dx.doi.org/10.14569/IJACSA.2018.091030>

[J.10] Talal Bonny, R. Aldebsi, Sohaib Majzoub and Ahmed Elwakil, ”Hardware Optimized FPGA Implementations of High Speed True Random Bit Generators Based on Switching-Type Chaotic Oscillators”, *Journal of Circuits, Systems, and Signal Processing* (**Impact Factor: 1.922**), July 2018.

[J.9] Talal Bonny and Ahmed S. Elwakil, “FPGA Realizations of High Speed Switching-Type Chaotic Oscillators Using Compact VHDL Codes”, *Journal of Nonlinear Dynamics* (**Impact Factor: 4.604**), July 2018; <https://doi.org/10.1007/s11071-018-4229-7>

[J.8] Talal Bonny and Safaa Henno, “Image Edge Detectors under Different Noise Levels with FPGA Implementations”, *Journal of Circuits, Systems and Computers* (**Impact Factor: 0.59**), March 2018; <https://doi.org/10.1142/S0218126618502092>

[J.7] Talal Bonny, Tamer Rabie, and A. H. Abdul Hafez, “Multiple histogram-based face recognition with high speed FPGA implementation”, *Journal of Multimedia Tools and Applications* (**Impact Factor: 2.101**), Feb. 2018; <https://doi.org/10.1007/s11042-018-5647-8>

[J.6] Anis Allagui, Andrea Espinel Rojas, **Talal Bonny**, Ahmed Elwakil, Mohammed Ali Abdul Kareem, “Nonlinear time-series analysis of current signal in cathodic contact glow discharge electrolysis” *Journal of Applied Physics* (**Impact Factor: 2.32**), Vol. 119, (2016); <https://doi.org/10.1063/1.4952732>

[J.5] Talal Bonny and Bassel Soudan:
" High speed database sequence comparison ",
Elsevier Procedia Computer Science, volume 62 – pages: 73-80,
September 2015. <https://doi.org/10.1016/j.procs.2015.08.413>

[J.4] Talal Bonny:
"A Hybrid Heuristic/Deterministic Dynamic Programming Technique for Fast Sequence Alignment", *International Journal of Advanced Computer Science and Applications*, volume 6 - issue 8, August 2015.
<https://doi.org/10.14569/IJACSA.2015.060830>

[J.3] Talal Bonny:
"Performance Optimization of the Database Sequencing Applications",
International Journal of Computer Applications, volume 112 - number 5,
February 2015. <https://doi.org/10.5120/19659-1315>

[J.2] Talal Bonny and Jörg Henkel:
"Huffman-Based Code Compression Techniques for Embedded Processors ",
ACM Transaction on Design Automation of Electronic Systems (TODAES), Volume 15 Issue 4, September 2010.

[J.1] Talal Bonny and Jörg Henkel:

Posters

"Efficient Code Compression for Embedded processors",
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