

	<b>Contact Information</b>		
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<b>Education/ Academic qualifications ( start with your most recent education first)</b>			
<b>Year</b>	<b>School / University</b>	<b>Specialization</b>	<b>Degree</b>
1992	Alexandria University, Faculty of Engineering	Computer Science And Automatic Control	BSc
1998	Alexandria University, Faculty of Engineering	Computer Science And Automatic Control	MSc
2004	University of Missouri-Kansas City	School of Computing and Engineering	PhD
<b>Academic Employment History (start with your most recent education first)</b>			
<b>From:</b>	<b>To:</b>	<b>University / Organization</b>	<b>Title of Position</b>
2019	present	Horus University in Egypt	Assistant/Associate Professor (Promoted 2021, Computer and Systems Engineering)
2005	2018	Tennessee Tech University	Assistant/Associate/Full Professor
1999	2004	University of Missouri-Kansas City	Teaching Assistant, Adjunct Faculty

*I do hereby declare that the information furnished above is true to the best of my knowledge.*

**Name:**

**Signature:**

<b>1995</b>	<b>1999</b>	Egyptian National Institute for Transport Nasr City, Egypt	Instructor/Lecturer
<b>Administrative Positions:</b>			
<b>From:</b>	<b>To:</b>	<b>University / Organization</b>	<b>Title of Position</b>
<b>10/2023</b>	<b>present</b>	Horus University in Egypt	Vice Dean for Postgraduate Studies, Research
<b>10/2025</b>	<b>present</b>	Horus University in Egypt	Artificial Intelligence Engineering Department Head
10/2022	10/2023	Horus University in Egypt	Vice Dean for Postgraduate Studies, Research, Community Services and Environmental Development Affairs (acting)
<b>3/2020</b>	<b>present</b>	Horus University in Egypt	Director, Center of International Projects and Scholarships
8/2021	10/2022	Horus University in Egypt	Mechatronics Department Head
1/2018	9/2018	Tennessee Tech University	Interim Department Chair, Electrical and Computer Engineering
<b>Teaching Experience (Courses, Language, Higher Education Only)</b>			
<b><u>Part-time:</u></b>			
<b>Digital Logic Design, Embedded System Design (AAST, Spring 2022)</b>			
<b>Others: Data-Science Methodologies, Cybersecurity, Introduction to Embedded Systems, Real-time Embedded System Design, Computer Networks, Network Security, Operating System Security, Computer Organization</b>			
<b><u>At HUE Full time (with starting semester)</u></b>			
<b>ECE 413: Embedded Systems, (Fall 2022)</b>			
<b>HUM 182: Analysis and Research Skills starting, (Spring 2022)</b>			
<b>ECE 442: Microcontroller and Applications, (Fall 2021)</b>			
<b>ECE241: Microprocessor and Applications, (Spring 2021)</b>			

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**Name:**

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**ECE 221: Digital and Logic Circuits, (Fall2020)**  
**EPE111: Principles of Electrical Engineering- once: Fall 2019**  
**ECE031: Computer for Engineers, (Spring 2020)**

**Prior Full time Teaching Experiences**  
**at TTU-USA: \* new courses, ^ directed study course**

1. ENGR 1020 Connections to Engineering and Technology
2. ECE 1020 Connections to Electrical and Computer Engineering
3. \*ECE 6900/ECE6170 High Performance Embedded System Design
4. ^ECE 7980 Directed Study: Theory and Design of Advanced Analog to Digital Data Converters
5. ECE 2110 Introduction to Digital Systems Design
6. ECE 3160 Digital Systems Lab
7. \*ECE 7970/ECE7170 Selected Topics in Embedded Systems
8. \*ECE 4140 Embedded Systems Design (offered for the first time in Spring 2010)
9. ECE 4110 Digital System Design

**at the University of Missouri-Kansas City, UMKC**

1. ECE 276 - Circuit Theory I, Summer 2000.
2. ECE 426 - Microcomputer Architecture and Interfacing. Fall 2000, and Fall 2001.
3. ECE 424 - Computer Design, Winter 2001, and Winter 2003.
4. ECE 330 - Electronic Circuits I, Fall 2002.
5. Prepared course materials for ECE 276, ECE 330 fully (slides for lectures, homework assignments and assessments, tests and final grading). Improved the contents of the original ECE 326 to ECE 426 to cope with modern concepts of microcomputer architectures

**Publications:**

Identify type of publication: book, refereed article, book chapter, journal article, non-refereed paper, major report, technical reports, research funds/grants

**Total 122 publications grouped as follows:**

**Patents Disclosed or Issued (5)**

1. **Pending: Egypt PTO - Experiential Learning via a reconfigurable board including a 144-pin FPGA, which controls 2 push buttons, 8 slide switches, 8 LEDs, 2 Seven-segments, 1 expansion header of 40-pins, and what is required of power input, programming port, and supporting electronics, disclosed 2023, processed 2026.**

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2. An Efficient Low-Cost Adaptive Heterogeneous Time Multiplexed Sampling (HTMS) for Data Acquisition systems, 2017, provisional.
3. US61/326,725 Heterogeneous Maximal Service Scheduling Technique, with M.Abdallah.
4. US60/801,517 Integrated Multichannel Digital Stethoscope, with A. T. Alouani.
5. US60/994,839 Integrated Multichannel Data Acquisition and Processing System, with A.T. Alouani.

#### **Book Chapters Published (4)**

6. with Mohammed Abdallah, "Towards Affordable Home Health Care Devices Using Reconfigurable System-on-Chip Technology," Book chapter 7, *Applied Biomedical Engineering*, INTECHWEB.ORG Publisher, ISBN 978-953-307-256-2, pp. 141-166, 2011
7. with G. Chaudhry, "Electronic Data Streaming: Management, Processing and Transmission: FPGA Based Video Streaming System for Bi-Network Multicasting Protocols," Accepted chapter. Nova publications, 2010.
8. with Dipankar Dasgupta, "Computational Intelligence in Securing Cyber Physical Systems," Accepted book chapter proposal in an edited handbook on "Securing Cyber-Physical Infrastructures: Foundations and Challenges." 2010.
9. with M. M. Matalgah, J. Qaddour, K. P. Sheikh; "Wireless Communications and Mobile Computing - Portability Architecture for Nomadic Wireless Internet Access Users and Security Performance Evaluation." Chapter 11, pp. 319 - 358, *Kluwer-Plenum Press*, New York, NY, USA, 2004.

#### **Technical Reports (3)**

10. with Mohamed Kamal, Hosam E. Mostafa, Hatem Khater, Mona Ismail , Mona Hamdy, "Experiential Learning in Computer Engineering; Using the low-cost computing technology of the Field Programmable Gate Array devices," Q3 Technical report, submitted 2024, approved 2025
11. with Hosam E. Mostafa, Hatem Khater, Mohamed Kamal, "Experiential Learning in Computer Engineering; Using the low-cost computing technology of the Field Programmable Gate Array devices," Q2 Technical report, 2023
12. with Mohamed Kamal, Hosam E. Mostafa, Hatem Khater, Noha El-Sayad, Mona Ismail , Mona Hamdy, "Experiential Learning in Computer Engineering; Using the low-cost computing technology of the Field Programmable Gate Array devices," Q1 Technical report, 2023

#### **Journal articles Published (27)**

13. Omer Alkelany, "Preliminary Design of Reconfigurable Logic Experiential Learning Board for Computer Engineering Research and Education," Volume 7, Issue 5, pp. 31-

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**Name:**

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- 36,  
<https://digitalcommons.aaru.edu.jo/cgi/viewcontent.cgi?article=1516&context=erjeng>,  
Scopus indexed-Elsevier Journal Article, 2023.
14. Omer Alkelany, “Experiential Learning in Computer Engineering using Basic Logic Design Circuits,” Volume 7, Issue 5, pp. 45-50,  
<https://digitalcommons.aaru.edu.jo/cgi/viewcontent.cgi?article=1518&context=erjeng>,  
Scopus indexed-Elsevier Journal Article, 2023.
15. Omer Alkelany, “Using Relational Database to Effectively Manage and Monitor Institutional Research Activities,” Volume 7, Issue 5, pp. 51-55,  
<https://digitalcommons.aaru.edu.jo/cgi/viewcontent.cgi?article=1557&context=erjeng>,  
Scopus indexed-Elsevier Journal Article, 2023.
16. Omer Alkelany, “Experiential Learning in Computer Engineering using Medium Complexity Logic Design Circuits,” Volume 7, Issue 5, pp. 56-61,  
<https://digitalcommons.aaru.edu.jo/cgi/viewcontent.cgi?article=1558&context=erjengr>,  
Scopus indexed-Elsevier Journal Article, 2023.
17. Omer Alkelany, “Experiential Learning in Computer Engineering using Advanced Logic Design Peripherals,” Volume 7, Issue 5, pp. 62-66,  
<https://digitalcommons.aaru.edu.jo/cgi/viewcontent.cgi?article=1521&context=erjeng> ,  
Scopus indexed-Elsevier Journal Article, 2023.
- 18.-, “Simultaneous Time Sampling for Heterogenous Multichannel Data Acquisition,”  
**International Journal of Advanced Scientific Research and Innovation. Volume 4, Issue 2, 2021, pp 39 – 52. ISSN: 2785-9541, 2021.**
19. with Rami Amiri, “FPGA Design of Elliptic Curve Cryptosystem (ECC) for Isomorphic Transformation and EC ElGamal Encryption”, *Embedded Systems Letters*, DOI: <https://doi.org/10.1109/LES.2020.3003978>, ISSN: 1943-0663, 2020
20. with S. F. Mossa, S. R. Hasan, “Hardware Trojans in 3-D ICs Due to NBTI Effects and Countermeasure”, *Integration, the VLSI Journal*. Elsevier, DOI: 10.1016/j.vlsi.2017.03.009, 2017
21. with S. F. Mossa, S. R. Hasan, “Self-triggering Hardware Trojan: Due to NBTI Related Aging in 3-D ICs”, *Integration, the VLSI Journal*. Elsevier, DOI: [10.1016/j.vlsi.2016.12.013](https://doi.org/10.1016/j.vlsi.2016.12.013). 2017.
22. with S. F. Mossa, S. R. Hasan, "Grouped TSV for Lower Ldi/dt drop in 3-DIC", *IET Circuits, Devices & Systems*, DOI: [10.1049/iet-cds.2015.0065](https://doi.org/10.1049/iet-cds.2015.0065), 2016.
23. with Rami Amiri, "A Reconfigurable Secure Networking Platform," *International Journal of Information Engineering (IJIE)*, Vol. 4, Issue 1, pp. 1-7, ID: [IJIE10107](https://doi.org/10.1016/j.ijie.2014.03.007), March, 2014.
24. with Rami Amiri "Reconfigurable Concurrent TCP/IP offload Custom Single-purpose Processor," *International Journal of Electrical Engineering Research & Applications (IJEERA)*, Vol. 1, Issue 4, pp. 16-19, September, 2013.

*I do hereby declare that the information furnished above is true to the best of my knowledge.*

**Name:**

**Signature:**

25. with Dhushyanth Venkatesan "Design and Implementation of a Custom Graphical Display Processor using FPGA," *International Journal of Emerging Technology and Advanced Engineering*, 2013.
26. with V. Todakar, "Data Archival to SD Card Via Hardware Description Language," *IEEE Embedded Systems Letters*, Vol. 3, No. 4, pp. 105-108, December, DOI: [10.1109/LES.2011.2168804](https://doi.org/10.1109/LES.2011.2168804), 2011.
27. with M. Abdallah, A. Alouani; "A Low-Cost Stand-Alone Multichannel Data Acquisition, Monitoring, and Archival System With On-Chip Signal Processing," *IEEE Transaction on Instrumentation and Measurement*, vol. 60 (8), pp. 2813-2827, DOI: [10.1109/tim.2009.2036402](https://doi.org/10.1109/tim.2009.2036402), 2011.
28. with Ali Alouani, Mohammed Abdallah; "Stand-alone Portable Digital Body Sound Data Acquisition Device." *International Journal of Embedded Systems*, Vol. 4, Nos.3/4, DOI: [10.1504/IJES.2010.039032](https://doi.org/10.1504/IJES.2010.039032), 2010.
29. with Kapil A. Gwalani,; "Design and Evaluation of FPGA Based Hardware Accelerator for Elliptic Curve Cryptography Scalar Multiplication." , *The World Scientific and Engineering Academy and Society (WSEAS) Transactions on Computers*, vol. 8(5), pp. 884-893, 2010.
30. with Kapil A. Gwalani,; "Design and Evaluation of Hardware Accelerator for Elliptic Curve Cryptography Point Multiplication" *Journal of Recent Advances in Applied Mathematics and Computational and Information Sciences*, Vol 2, pp. 431-436, ISBN: 978-960-474-071-0, 2009.
- 31.-; "On Chip Novel Video Streaming System for Bi-network Multicasting Protocols." *Integration, the VLSI journal*, vol. 42, pp. 356-366, DOI: [10.1016/j.vlsi.2008.10.001](https://doi.org/10.1016/j.vlsi.2008.10.001), 2009. Kinslow Engineering Research Award winner.
- 32.-; "Design and Analysis of Various Models of RC5-192 Embedded Information Security Algorithm." *International Journal of Applied Mathematics and Informatics*, vol.1(2), pp. 18-27, URL: <http://www.naun.org/main/UPress/ami/ami-27.pdf>, 2008.
33. with A. Olabisi; "Performance Comparisons, Design and Implementation of RC5 Symmetric Encryption Core," *Journal of Computers*, Issue 1, pp. 48-55, DOI: [10.4304/jcp.3.3.48-55](https://doi.org/10.4304/jcp.3.3.48-55), 2008.
34. with G. Chaudhry; "Integrating Firewire Peripheral Interface with an Ethernet Custom Network Processor." *Integration, the VLSI Journal*, vol. 40(4), pp 536-548, DOI: [10.1016/j.vlsi.2006.09.003](https://doi.org/10.1016/j.vlsi.2006.09.003), 2007.
35. with M. Abdallah, A. Alouani; "An Efficient Embedded System Design for Capturing and Storing Analog Data." *Journal of Engineering and Applied Sciences*, Medwell Journals, vol. 2(8), pp. 1290-1296, ISSN: 1816-949X, 2007.
- 36.-; "Extending Quality of Video Streaming with Dynamic Isochrones Resource Mapping to Ethernet Channels." *The IEEE Transactions on Consumer Electronics*, vol. 53(2), pp. 683 - 690, DOI: [10.1109/tce.2007.381746](https://doi.org/10.1109/tce.2007.381746), 2007.

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37. with M. M. Matalgah, J. Qaddour; "Remote Access Virtual Private Network Architecture for High Speed Wireless Internet Users." *Journal of Wireless Communications & Mobile Computing* (WCMC), vol. 4(5), pp. 567-578, URL: <https://onlinelibrary.wiley.com/doi/epdf/10.1002/wcm.197>, August 2004.
38. with G. Chaudhry; "SPEED: Stand-Alone Programmable Ethernet Enabled Devices." *Journal of Microprocessors and Microsystems (JM&M)*, vol. 28(7), pp. 387-399, September 2004.
39. with G. Chaudhry; "Direct Connect Device Core: Design and Applications." *Integration, the VLSI Journal*, vol. 37(2), pp. 83-102, May 2004.

#### Conference Papers Submitted/Accepted/Published (68)

40. Omer Alkelany, Hatem Khater, Mohamed Kamal, Hosam E. Mostafa, "Preliminary Evaluation of Experiential Learning in Engineering Pedagogy for Undergraduate Students Learning Logic Design Concepts" to the First International Conference on Engineering Solutions toward Sustainable Development (ESSD-2023), [https://link.springer.com/chapter/10.1007/978-3-031-46491-1\\_40](https://link.springer.com/chapter/10.1007/978-3-031-46491-1_40), Pages 649-657, Scopus indexed-Springer Conference Proceedings, 2024.
41. Omer Alkelany, Hatem Khater, Mohamed Kamal, Hosam E. Mostafa, "Survey and Evaluation of Applied Modern Engineering Pedagogy" to the First International Conference on Engineering Solutions toward Sustainable Development, [https://link.springer.com/chapter/10.1007/978-3-031-46491-1\\_39](https://link.springer.com/chapter/10.1007/978-3-031-46491-1_39), Pages 635-648, Scopus indexed-Springer Conference Proceedings, 2024
42. Omer Alkelany, "Analysis of the Time Multiplexed Sampling and a Proposed Prototype for Effective Heterogenous Data Acquisition Systems" to the First International Conference on Engineering Solutions toward Sustainable Development, [https://link.springer.com/chapter/10.1007/978-3-031-46491-1\\_41](https://link.springer.com/chapter/10.1007/978-3-031-46491-1_41), Pages 659-668, Scopus indexed-Springer Conference Proceedings, 2024.
43. Omer Alkelany, "Simultaneous Time Sampling in Heterogenous Multi-channel Data Acquisition", Abstract, 4th ICEST International Conference on Engineering Science and Technology, Luxor, Egypt, February 16th – 17th, 2022.
44. with Abdallah Usama, Mohamed Dora, Mohamed Elhadidy, Hatem Khater, First Person View Drone, 5th International Undergraduate Research Conference (2021) of Military Technical College, 2021.
45. with Alvaro Canto, "Integration of Fully Pipelined Rijndael 256 in a Reconfigurable Logic with an External Memory", In Proceedings of 33rd ISCA International Conference on Computers and Their Applications, 2018.
46. with S. R. Hasan, "Formal Verification of Ladder Logic programs using NuSMV, "IEEE SoutheastCon, 2017
47. with Siraj Moosa, "Towards Real-time Embedded System Design for Video Capturing and Privacy Protection," In proceedings of IEEE Future Technologies Conference, 2016.

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Name:

Signature:

48. with Rami Amiri, 'Integrating Open TCP/IP Core and FPGA-based Cryptosystem on Chip,' IEEE SoutheastCon, 2016.
49. with Kiran Prince, Siraj Fulum Mossa, 'System-on-a-Chip design for YUV2 to RGB Color Space Conversion on Altera DE2 FPGA Board,' ICIEEE proceedings, Pp. 159 –163, 2015.  
**Excellent paper content and presentation.**
50. with S. R. Hasan, S. F. Mossa, F. Awwad, "Tenacious Hardware Trojans Due to High Temperature in Middle Tiers of 3-D ICs", Proceedings of the MidWest Symposium on Circuit and Systems (MWSCAS'2015), August, 2015.
51. with Rami Amiri, "Fusing Internet Protocol (IP) Receive Module at Receiving Path of open TCP/IP Custom Single-Purpose Processor," IEEE SoutheastCon2014 conference, 2014.
52. with S. F. Mossa, S. R. Hasan, "Introducing Redundant TSV with Low Inductance for 3-D IC ", in IEEE NEW Circuits and Systems Conference (NEWCAS' 2014), June 2014
53. with Rami Amiri, "Concurrent Reconfigurable Architecture for Mapping and Encrypting a Message in Elliptic Curve Cryptography," IEEE SoutheastCon 2013 conference, 2013.
54. with Rami Amiri, "Synthesizing and Integrating TSE with Hard Core TCP/IP for Smart Grid". IEEE SoutheastCon 2013 conference, 2013.
55. with Mohamed Abdelrahman, "A Multi-Level Curriculum in Digital Instrumentation and Control based on Field Programmable Gate Array Technology, "American Society of Engineering Education-Southeast Section Conference, 2013
56. with Rami Amiri, "A Reconfigurable Hardware Networking Platform for Smart Grid", In Proceedings of the IEEE Southeast Conference 2012, SECON'12, Florida, 2012.
57. with Rami Amiri, "An Embedded TCP/IP Hard Core for Smart Grid Information and Communication Networks", In Proceedings of the IEEE Southeast Symposium on System Theory SSST'12, Florida, 2012.
58. with Rami Amiri, "An Experimental Real-Time Platform for Smart Grid Information and Communication Networks," Abstract, Tennessee Academy of Science, Jackson, TN, 2011.
59. with V. Todakar, "Data Concentration and Archival to SD Card via Hardware Description Language," In Proceedings of the GLOBCOM-MENS Workshop, Houston, 2011.
60. with Dhushyanth Venkatesan, "Multiple curve presentation and zooming processor using Field Programmable Gate Arrays," In proceedings of The IEEE SoutheastCon Conference (SECON'11), Nashville, TN, 2011.
61. with Rami Amiri, Rabab Hassan, "Modeling TCP/IP Stack in a Single Custom Processor, with Secure Data Transmission to an Altera-Based Web Server", In proceedings of The IEEE SoutheastCon Conference (SECON'11), Nashville, TN, 2011.
62. with Dhushyanth Venkatesan, "Multiple curve presentation and zooming processor using FPGA," Abstract, Tennessee Academy of Science, Cookeville, TN, 2010. **First Place, Student Oral Presentation Award.**
63. with Mohammed Abdallah, "A Multi-channel Frequency Detection and Monitoring System," In proceedings of *The 23 rd IEEE International SOC Conference (SOCC'10)*, 2010.

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**Name:**

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64. with Vivekanad S. Todakar, "On-chip Hardware Mechanism for Storing Data in SD Card," In proceedings of *The International Conference of Embedded Systems (ICES)*, India, 2010.
65. with G. Chaudhry, "Performance Evaluation of Multi-Core Architectures for Bi-Network Protocol Conversions," In proceedings of *The International Conference of Embedded Systems (ICES)*, India, 2010.
66. with Mohammed Abdallah; "A Low-Cost Stand-Alone Real-Time Multi-Channel Frequency Monitoring System." In proceedings of *The IEEE SoutheastCon Conference (SECON'10)*, 2010
67. with Shravani Yerabati, Zhen Hu; "Real-Time GPS Receiver Implemented using Altera FPGA Board." In proceedings of *The IEEE SoutheastCon Conference (SECON'10)*, 2010.
68. with Peng Zhang, Layton McDaniel; "An Implementation of Secured Smart Grid Ethernet Communications using AES." In proceedings of *The IEEE SoutheastCon Conference (SECON'10)*, 2010.
69. with Seemantini Majgaonkar; "FPGA-Based MPEG-4 Video Encoder SoPC Design with Performance Acceleration of Motion Estimation Block." In proceedings of *The ISCA 22nd International Conference on Computer Applications Industry and Engineering*, 2009.
70. with Mohammed Abdallah; "Multi-channel Multiplexed Stand-alone Audio Data Acquisition System: The effect of settling time on acquisition accuracy." In proceedings of *The ISCA 22nd International Conference on Computer Applications Industry and Engineering*, 2009.
71. with M. Abdallah, A. Alouani; "A Novel Dynamic Scheduling for Simultaneous Multi-channel DAQ." In proceedings of *The International Conference on High Performance Computing, Networking and Communication Systems (HPCNCS)*, 2009.
72. with M. Abdallah, A. Alouani; "Multi-channel Multiplexed Stand-alone Audio Data Acquisition System." In proceedings of *The International Conference on High Performance Computing, Networking and Communication Systems (HPCNCS)*, 2009.
73. with M. Abdallah; "Simultaneous Multi-channel Data Acquisition and Storing System." In proceedings of *The International Conference on Computing, Engineering and Information Systems (ICC)*, 2009.
74. with M. Abdallah, "A Survey on Data Acquisition systems DAQ." In proceedings of *The International Conference on Computing, Engineering and Information Systems (ICC)*, 2009.
75. with M. Abdallah, A. Alouani; "A Conceptual Design of a Compact Multi-channel real-time Analog Signal Acquisition and Processing System." In proceedings of *The IEEE 41st Southeast Symposium on System Theory (SSST)*, 2009.
76. with W. A. Deabes, M. Abdallah, M. A. Abdelrahman; "Reconfigurable wireless Stand-alone Platform for Electrical Capacitance Tomography." In proceedings of *The IEEE Symposium on Computational Intelligence in Control and Automation (CICA)*, 2009.
77. with M. Abdallah, A. Alouani; "Simultaneous Multi-channel Data Acquisition with Variable Sampling Frequencies using a Scalable Adaptive Synchronous Controller." In

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**Name:**

**Signature:**

- proceedings of The ACM/SIGDA International Symposium on Field-Programmable Gate Arrays (FPGA), 2009.
- 78.-; "Design and Analysis of a Reconfigurable Information Security Algorithm:RC5-192." In proceedings of The World Scientific and Engineering Academy and Society(WSEAS) 10th International Conference on Mathematical and Computational Methods in Science *and Engineering (MACMESE)*, Romania, 2008.
- 79.with M. Abdallah, A. Alouani; "An Efficient Hardware Reconfigurable Multichannel Audio Data Acquisition, Storing and Monitoring System." In proceedings of The IEEE International Conference on Consumer Electronics (ICCE), 2008.
- 80.with M. Abdallah; "System-On-Chip Technology-based On-the-fly Audio Data Acquisition, Monitoring and Displaying System using FPGA." In proceedings of The International System on Chip conference, Korea, 2008.
- 81.with Suman Nimmagadda; "Effect of Loop-Unrolling in Hardware Reconfigurable Implementations of RC5-192 Encryption Algorithm." In proceedings of The IEEE Power, Biotechnology, Avionics, Security, Informatics, Computer, Software, Systems Conference, PBASICS2,pp. 196-199, 2008.
- 82.with J. Yenuguvanilanka; "Performance Evaluation of Hardware Models of Advanced Encryption Standard (AES) Algorithm." In proceedings of The IEEE Southeast Conference, pp. 222-225, 2008.
- 83.with M. Abdallah, A. Alouani, "Stand-alone Data Acquisition System with Graphical Monitoring of Analog Data in Embedded System Applications." In proceedings of The IEEE Southeast Conference, pp. 252-256, 2008.
- 84.with I. Fidan, T. Dean, S. B. Serkownek, L. K. Goolsby; "Broadening Rapid Prototyping Awareness via P16 Stem Teacher Workshops." In proceedings of The ASEE Conference, Pittsburgh, 2008.
- 85.with A. Alouani, M. Abdallah; "A Novel Design and Development of a Single Channel Integrated Digital Body Sound Data Acquisition Device." In proceedings of The International Conference on Biomedical Electronics and Devices, Portugal, vol. 2, pp. 244-249, 2008.
- 86.with G. Chaudhry; "A Multi-core architecture for bi-network protocol conversion." In proceedings of The ISCA 20th Parallel and Distributed Computing Systems Conference, pp. 290-295, 2007.
- 87.with M. Abdallah, A. Alouani; "An Efficient Embedded System Design for Capturing and Storing Analog Data." In proceedings of The ISCA 20th Parallel and Distributed Computing Systems Conference, pp. 302-307, 2007.
- 88.with Suman Nimmagadda; "Performance Evaluation of Different Hardware Models of RC5 Algorithm." In proceedings of The IEEE 39th Southeastern Symposium on System Theory, 2007.
- 89.with George Vince; "Portable Analog Data Capture Using Custom Processing." In proceedings of The IEEE 39th Southeastern Symposium on System Theory, 2007.

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**Name:**

**Signature:**

- 90.-; "A Novel Design of Firewire to Ethernet Bridge." Accepted in The IEEE Southeast Conference, 2007. (Not published).
- 91.with Adegoke Olabisi; "Case Study: Integrated Design of RC5 Encryption." In proceedings of The IEEE Southeast Conference, 2007.
- 92.with, A. Olabisi; "Gaining Extra Crypto-Security using System on Chip Model forRC5." In proceedings of The IEEE 38th Southeastern Symposium on System Theory (SSST),pp. 71-74, March 2006.
93. -; "A Low Power Embedded System Design and Synthesis of Remotely Programmable Direct Connect Device Core." (PhD. Dissertation), University of Missouri-Kansas City, 2004.
- 94.with G. Chaudhry; "Standalone Programmable Ethernet Enabled Devices." In proceedings of The IEEE 46th International Midwest Symposium on Circuits and Systems, Cairo, Egypt, December 2003.
- 95.with G. Chaudhry; "HDL Based EEPROM Controller with Parallel Port and System Board Interfaces." In proceedings of The International Conference on Computer, Communications and Control Technologies, Orlando, FL, 2003.
- 96.with M. M. Matalgah, J. Qaddour and K. P. Sheikh; "Layer 3 Security Architecture for Next Generation Portable Broadband Wireless Network." In proceedings of The3GWireless Conference, San Francisco, CA, 2003.
- 97.with G. Chaudhry; "Design and Synthesis of Direct Connected Network Devices Controller." In proceedings of The IEEE 15th ASIC/ Systems on Chip Conference, pp 265-269, Rochester, NY, September 24-27, 2002.
- 98.with G. Chaudhry; "A Prototype of WideBand/Ethernet Bridge using WEMAC." In proceedings of The IEEE 45th International Midwest Symposium on Circuits and Systems,vol. 1, pp. 595-598, Tulsa, OK, August 4-7, 2002.
- 99.with G. Chaudhry; "Design of WEMAC: Wideband Embedded Media Access Controller." In proceedings of The Very Large Scale Integration Conference (VLSI), pp 22-27, Las Vegas, NV, June 24-27, 2002.
100. with M. M. Matalgah, K. P. Sheikh, M. Thaker, G. Chaudhry, D. Medhi, J.Qaddour; "Performance Analysis of IPsec Protocol: Encryption and Authentication." In proceedings of The IEEE International Conference on Communications (ICC), vol. 2, pp.1164 -1168, New York, NY, 2002.
101. with G. Chaudhry, C. Beard; "Deadlock Characterization in Irregular Computer Networks." In proceedings of The 13th International Conference on Parallel and Distributed Computing Systems, pp. 308-313, Las Vegas, NV, August 2000.
102. with A. G. Bahgat, F. El-Tony, R. El-Mahdi, E. Boshra, K. Abbas, A. Fattah, P. R.White; "Impacts of the Cairo Metro." In proceedings of The 3rd International workshop-Transportation Planning Methodologies for Developing Countries: Emerging Trends. Indian Institute of Technology (IIT), Mumbai, India, 1998.

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**Name:**

**Signature:**

103. with A. G. Bahgat, F. El-Tony, R. El-Mahdi, E. Boshra, K. Abbas, A. Fattah, P. R.White; "A Study of the Cairo Metro With Particular Reference to the Impact on the Urban Poor: Including Comparisons with Santiago and Rio De Janeiro." Final Report, 1998.
104. with P. R. White, A.G. Bahgat, F. El-Tony, R. El-Mahdi, E. Boshra, K. Abbas, A. Fattah,; "Impacts of the Cairo Metro -Passenger Survey." In proceedings of The6th International Conference on Competition and Ownership in Land Passenger Transport, Cape Town, South Africa, September 1999.
105. with A. A. Shoukry, S. Fouad, M. M. Fahmy; "A Neural Based Road Sign Recognition System." In proceedings of The 6th International Conference of Artificial Intelligence Applications (ICAIA), Cairo, Egypt, 18-21 February 1998.
106. with A. A. Shoukry, S. Fouad, M. M. Fahmy; "Road Sign Recognition Using Neural Networks." (Master thesis), Computer Science and Automatic Control, School of Engineering, University of Alexandria, Egypt, 1998.
107. with M. M. Fahmy; "An Application of Computer Vision to Automatically Recognize Road Signs." In proceedings of The IEEE 7th Conference on Computer Theory and Applications, Alexandria, Egypt, September 1997.

#### **Master Thesis published, as Supervisor (12)**

108. Alvaro Cintas, Evaluation of AES256, and increase of block size of encryption from 128 to 256, with a memory subsystem, 2018
109. Kiran Prince, Intelligent System for YUV2 to RGB Color Space Conversion on Altera DE2FPGA Board, 2014.
110. Mohammad Lutfi Al-Azzeh, Wavelet Time Entropy in T-wave Alternans Detection in Presence of Noise, 2014.
111. Michael Ben Vaughn, A Low Cost Standalone Multichannel Data Acquisition System Utilizing Heterogeneous Time-Multiplexed Sampling, 2013.
112. Dhushyanth Venkatesan, Design and Implementation of an Efficient Multiphase Digital Pulse Width Modulator with Integrated Graphical Display Processor using FPGA, 2012.
113. Vivekanand S. Todakar, Reconfigurable Chip Design of Bidirectional Access Controller to The SD Card Using FPGA, 2010.
114. Kapil A. Gwalani, Design and Evaluation of an FPGA Based Hardware Accelerator for Elliptic Curve Cryptography Point Multiplication, 2009.
115. Seemantini Majgaonkar, FPGA-Based Mpeg-4 Video Encoder SoPC Design With Performance Acceleration of Motion Estimation Block, 2009.
116. Jyothi Yenuguvanilanka, Performance Evaluation of Hardware Models of Advanced Encryption Standard (AES) Algorithm, 2008.
117. George Vince, Design of a Portable Audio Capture & Recording Embedded System Using System-On -Programmable-Chip (SoPC) Technology, 2007.

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**Name:**

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118. Suman Nimmagadda, Performance Evaluation of SoPC and Single-Custom Processor Models of RC5 Encryption Algorithm, 2007.
119. Adegoke Olabisi, System on Chip Architecture for RC5 with Enhanced Security, 2006.

### **PhD Student Graduated & Published Dissertation Title (3)**

120. Siraj Moosa, Investigation of Reliability and Security Issues Through Silicon Via Based Three-Dimensional Integrated Circuits, (Co Advisor), 2016
121. Rami Amiri, Conception, Synthesis, and Integration: Custom-State Machine TCP/IP Offload Engine and Cryptosystem for Isomorphic Transformation and Elliptic Curve Cryptography on an FPGA chip, 2014
122. Mohammed Abdallah, Reconfigurable Stand-alone Multi-channel Data Acquisition, Archiving, Monitoring and Processing System using FPGA-SoPC Technology with Heterogeneous Maximal Service Scheduling, 2010.

### **Teaching and Professional Development Workshops Attended**

1. **Research Ethics, Horus University- Egypt, 2024.**
2. **Technology Transfer Management, AUTM/STDF, 30 hours online, and 30 hours on-site, 2023-2024.**
3. **IP Basics for Software Engineering, AUTM online seminar, 2024.**
4. **Strategic Planning, two-day workshop, HUE, 2023.**
5. **“Planning for Conferences, Seminars, and workshops”, Faculty development workshop, Tanta University, 2021.**
6. **“Time management”, Faculty development workshop, Tanta University, 2021.**
7. **“Credit hour Systems”, Faculty development workshop, Tanta University, 2021.**
8. **“Ethical Hacking”, EC-Council, 2019.**
9. **“EC-Council Instructor,” EC-Council, 2019.**
10. **“Positive Leadership”, TTU Leadership training, 2018**
11. **“A Day in Exploring Cybersecurity” Cybersecurity Education, Research and Outreach Center (CEROC), TTU, 2017.**
12. **“Cybersecurity Awareness Workshop for Tennessee Tech Faculty and Staff”, CEROC, TTU, 2016**
13. **“Teaching Large Classes”, Virginia Tech Workshop, 2016**
14. **National Effective Teaching Institutes, “NETI-Basic”, in conjunction with ASEE conference, Seattle, June, 2015.**
15. **“Design Thinking, Low Res Prototyping,” New Mexico State University, Las Cruces, September 18-20, 2014.**
16. **“Knoval on-line search engine for engineering and material sciences”, 2013.**

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17. "National Network for Manufacturing Innovation (NNMI) Planning Workshop", Tennessee Tech University, 2013.
18. "Teaching, Learning, and Assessment: Creating learning environments that encourage critical thinking and problem solving," by Dr. Dr. Barry Stein, TTU, January, 2012
19. "Hands-on Programming Workshop" by Stephen Canfield, and Sheikh Ghafoor.
20. "Orientation to teaching Connections of Engineering and Technology". TTU, August, 2011.
21. "ABET Faculty Workshop on Sustainable Assessment Processes," Louisville, KY, June 2010.
22. "6th Annual Cyber Security and Information Intelligence Research Workshop," ORNL, April, 2010.
23. "NSF Day at Middle Tennessee State University," December 2009.
24. "Effective Management of Student Conduct," Tennessee Technological University, 2009.
25. "Faculty and Student Integration of Podcasting & the iPod Touch: Dr. Jeremy Wendt, Sponsored by Oakley STEM Center, and ASEE, February 12th, 2009.
26. "Proposal Development: Preparing your best proposal," Dr. Robby Sanders, Sponsored by TTU Office of Research, September 26th 2008.
27. "Asynchronous Logic Design" Scott C. Smith, University of Arkansas, Three day workshop, 2008.
28. "NSF-Directorate of Computer Science and Engineering (CISE) informational meeting about the Network Science and Engineering Program (NetSE)," September
29. "Fostering Critical Thinking Skills," in Engineering education, Dr. Lenly J. Weathers, TTUQEP program, 2008.
30. "Delta-Sigma Modulators," James M. Bryant of Analog Devices Inc., 2007.
31. "Current Development in the Computer and Network Systems Division of the Computer and Information Science and Engineering Directorate (CISE)," Dr. Roger Billings, Online, 2007.
32. "Accelerating Software Development for Soft Processors and FPGA-Based Embedded Systems," Altera Web Seminar, 2006.
33. "Creating Enhanced Embedded Systems with FPGA Hardware Development Tools," Altera-Web Seminar, 2006.
34. "Solving Embedded System Issues with FPGAs and Soft Processors," Altera Web Seminar, 2006.
35. "Proposal Development Workshop," Office of Research, Dr. Rubye P. Torrey, Assistant Vice President for Research, on Saturday, November 12, 2005,
36. "Workshop on learning patterns," Office of Academic Affairs, Dr. Robert Clougherty, Professor of English, and Dr. Sandi Smith, Assistant Professor
37. "Classroom Behavior," The Instructional Improvement and Faculty Development Committee, Jan Cupp, November 3rd, 2005.
38. "Investing in Engineering Faculty – A Comprehensive Faculty Development Program," Dr. Noel N. Schulz, Associate Professor in ECE, Mississippi State

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39. “Engineering Education in the College of Engineering: A Workshop for Young Faculty,”  
College of Engineering, Monday, August 22nd, 2005.

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### Other Relevant Experience

Consultancy, Community Involvement, Voluntary Work, Translation of books, Journal reviewing, mentoring of junior staff, Service to the discipline, Editing/refereeing for scholarly journals...etc.

### Grant Proposals Awarded

I participated in **funded** grants totaling about **\$2.25M**, and **currently in a pre-contracting phase of an accepted STDF project as indicated below.**

1. PI @ HUE, “Technology Transfere Program; US-Egypt cooperation program, running. Science Technology and Innovation Development fund (STDF), #49668, 2023
2. PI @ HUE, “Experiential Learning in Computer Engineering; Using the low-cost computing technology of the Field Programmable Gate Array devices,” **1,598,600** EGP, Running. Science Technology and Innovation Development fund (STDF), #45945, 2022
3. PI (w/ Dr. Mahmoud), “Efficient Energy Management System with Integrated Cybersecurity Measures in Qatar’s Smart Grid” QNRF, Awarded **\$899,897** (activated April, 2018)/ TTU share **\$89,964**, **role: 50% effort**, 2017.
4. Senior Personnel-Student Mentor, NSF REU Site: Secure and Privacy Preserving, Awarded **\$359,738**, **role \$4000**. 2016-2018.
5. Senior Personnel, “Renaissance Rainbow Awards for Rising Engineers”, with Martha Kosa and Ambareen Siraj (CSC), Jane Liu and Alfred Kalyanapu (CEE), Jeff Austen (ECE), Cynthia Rice-York and Holly Stretz (ChemE), Corinne Darvennes and Sally Pardue (ME), Ismail Fidan and Fred Vondra (MET), **\$6,800 per year**, total **\$34,000** for 2013-2017.
6. Senior Personnel, “Performance Optimization and Extended Speed Control of Multi-Phase Winding Induction” Office of Naval Research, The budget was **\$537,405** for three years. Joined the project in July 2010. Role: funded **\$11,714.75** in 2010.
7. Senior Personnel, “Smart Grid Research- FNET Cyber Security.” The grant award was **\$415,000** for 18 months, till December 2010, Role: funded **\$12,004.70** in 2010.
8. PI, “Embedded High-quality Video Streaming System in Heterogeneous Multicast Network Technologies.” Submitted to TTU Faculty Research Grant in January 2006. The grant award was **\$4,000** for 2009-2010.
9. PI, “Embedded Systems Design and Hands-On Experience through Integrated Software and Hardware Design Kits.” Submitted to the College of Engineering, funded by the State Board of Architectural Examiners for **\$7,200** for 2008.
10. PI, “High-performance Stand-alone Programmable Embedded Ethernet.” Submitted to TTU Faculty Research Grant in January 2006. The grant award is **\$4,000** for 2006-2007.
11. Co-PI, “NSF CCLI: The Development of a Remotely Accessible Rapid Prototyping Laboratory,” Joined the project in August 2007. The award is **\$125,000** for three years. Co-PI role 25%=**\$31,250**. 2007.

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## Academic Services

1. Vice Dean Postgraduate Studies and Research, HUE, 2022-
2. Conference General Secretary, Applied Innovative Research on Engineering Grand Challenges, 2023.
3. Vice Dean of Community Services and Environmental Development Affairs 2022-2023.
4. Department Chair, Mechatronics, HUE, 2021-2022
5. Interim Chair of ECE department, TTU, USA 2018
6. ABET Lead coordinator for two programs in ECE Department (2014):
  - a. Bachelor of Science in Electrical Engineering (BSEE)
  - b. Bachelor of Science in Computer Engineering, (BSCmpE)
7. Chair of the Computer Engineering Faculty Search Committee, 2012-2014.
8. Chair of the ECE BS Computer Engineering Program Committee, 2012-2018.
9. Chair of the ECE assessment committee, 2009-2018.
10. Chair of the Facilities & Laboratories committee from 2007 to 2008.
11. Member ECE BS Computer Engineering Program Committee, 2005-2018.
12. ECE Undergraduate Program Committee, 2008-2018.
13. ECE Computer & Laboratory Committee, 2009.
14. ECE Faculty search Committees, served 2008-2018.
15. Faculty Advisor: IEEE TTU Chapter, 2005-2018
16. Member: Outstanding Faculty Award Committee, 2011-2014.

## Professional Services-Article Reviewer

**(a) Proposal reviewer:** The Ralph E. Powe Junior Faculty Enhancement Awards Program, 2010-2012.

**(b) Conference paper reviewer**

1. The International Conference on Embedded Systems, 2010.
  2. The IEEE Southeast Symposium on System Theory, 2009, 2010, 2011, 2014.
  3. The 13th World Multi-Conference on Systemics, Cybernetics and Informatics: (WMSCI), 2009.
  4. IEEE Control Systems Society Conference Management System, 2009.
  5. 13th International Symposium on Consumer Electronics, 2009.
  6. The 4th International Conference on Cybernetics and Information Technologies, Systems and Applications: (CITSA), 2007.
  7. IEEE Region 5 Technical Conference, 2007.
  8. 20th International Parallel and Distributed Computer Systems Conference, 2007.
  9. The IEEE International Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC), 2006.
  10. International Wireless Communications and Mobile Computing Conference (IWCMC), Next Generation Mobile Networks Symposium, 2006.
1. Elsevier. Computer Communications. 2016.

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**(c) Journal Reviewer:**

1. Elsevier, Computer Communications, 2016.
2. IEEE Embedded System Letters, 2014
3. Elsevier: Sustainable Energy Technologies and Assessments, 2013
4. Turkish Journal of Electrical Engineering & Computer Sciences, 2013.
5. Transactions on Emerging Telecommunications Technologies, 2012.
6. International Journal of Adaptive Control and Signal Processing, 2012.
7. IEEE Transactions on Instrumentation & Measurement, 2012.
8. Journal of Computer Science and Technology (JCST), 2010.
9. The International Journal for Computers and their Applications, 2004-2009, 2011.
10. International Journal of Network Security, 2007-2009.
11. International Journal of Communications, Network and System Sciences, 2008
12. Journal of Security and Communication Networks, 2008.
13. IEEE Transactions on Electronics Packaging and Manufacturing, 2007.

**(d) Book Reviewer:**

1. Number Conversions, Codes and Function Minimization, 2012.
2. Digital Logic and Microprocessor Design with VHDL, Submitted to Global Engineering, Cengage Learning, 2010.
3. Logic Circuit Design by Alan Shaw, Submitted to John Wiley & Sons, Inc., 2009

**Other Services- Conference Sessions Chaired or Technical Committees Served**

1. **Session Chair, IEEE 41'st NRCS radio conference, HUE, April 2024.**
2. **General Secretary, Organizing Committee Chair, Applied Innovative Research in Engineering Grand Challenges (AIRGEC-HUE, 2023), October 25<sup>th</sup> - 26<sup>th</sup>, 2023.**
3. **Host: Entrepreneurship Conference, Techne Tour, HUE-Hall A, February 4-2023.**

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4. Technical program committee. **Chair** for research paper review, ASEE-SE, 2015
5. TTU Research Day Judge, 2013.
6. Site and planning committee member, ASEE-SE, 2013.
7. Technical program committee member, ASEE-SE 2015, IEEE SSST (2012, 2013).
8. External evaluator for faculty promotion to Associate professor, United Arab Emirates University, College of Information Technology, Computer System Design Track, 2013.
9. Officer for ASEE-SE Computer Engineering Division (Secretary, 2012, Vice chair 2013)
10. Technical program committee member, International Conference on Electronics, Communication and Computer Science, 2012.
11. Judge, Putnam County Science Fair competition. Engineering Discipline, 2012.
12. Student Paper Contest Coordinator, IEEE SoutheastCon, 2011.
13. Student Software Competition **Chair**, IEEE SoutheastCon 2011.
14. Technical Program Committee member, International Conference on Embedded Systems, 2010
15. Technical Program Committee member, IEEE Southeast Symposium on System Theory (SSST), 2012
16. Session Chair, CAINE'09, International Conference on Computer and their Application in Industry and Engineering, November 2009.
17. Member of the ASEE new teach award committee, 2010.
18. Member of the ASEE engineering ethics competition committee, 2010.
19. Session Chair, International Conference on Computing, Engineering and Information Systems, ICC, 2009.
20. Session Chair, ASEE conference, 2008.
21. Technical Program Committee member, International Conference on Parallel and Distributed Computing Systems (PDCS), 2007.
22. Session Chair, IEEE SoutheastCon Conference (SECON), 2007.
23. Session Chair, Southeast Symposium on System Theory (SSST), 2006.

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