



Dr. Ramzi JABER

Ph.D. and Researcher in Computer Engineering (Embedded Systems and IoT)
Embedded Systems & AIoT Specialist - Ternary Computing Focus

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Profiles: (Click to open the links below)

- Google Scholar | H-Index: 12 | 24+ Peer-Reviewed Publications
- Web of Science | 90+ Article Reviews
- Research Gate | Ranked TOP 11% in the world
- YouTube Online Courses during COVID19
- Webpage: DrRamziJaber.com

November 8, 2025

Summary:

- **24+** Scientific publications in peer-reviewed journals, conferences, and a chapter in a Book
- **90+** Scientific articles reviews for many peer-reviewed journals and conferences
- **6** years of scientific research in Ternary circuits, Microelectronics, AI, and SDN
- **17** years of teaching experience in different Universities
- **16** years of experience in Business Development, Market Research & Analysis, and Sales
- **23** years of experience in IT Management, Network Security, Programming, and Renewable Energy
- **14 Certifications** in AI, CISCO (Cyber Security, CCNA), Ethical Hacker, Management, Green Energy, and others

Taught Courses

- Microprocessor (8085) System Design
- Fundamentals of Computer Hardware: RISC MIPS
- Computer Organization and Architectures: RISC-V CPU
- Computer Hardware: FPGA
- Microcontroller (16F84)
- Performance Evaluation
- Computer Networks
- Database Systems
- Digital Electronics
- Digital Systems I & II
- Design and Analysis of Algorithms
- Computer Programming I & II: C, C++
- Programming For Engineers: Python
- Queueing and Modeling
- Discrete Structures
- Object Oriented Program: OOP

Taught Software & Computer Languages

- Intel Quartus & Model Sim: VHDL
- Intel VTune Profiler: Computer performance
- Ripes: RISC-V assembly code
- MARS: RISC MIPS assembly code
- MPLAB IDE: Controller
- Arduino: Robotics
- MS Visual Studio: C, C++, VB.Net, ASP.Net
- MS Office: Word, Excel, Access, PowerPoint
- PyCharm: Python
- Lisp Works: LISP & PROLOG
- Web: HTML5, JavaScript, CSS, PHP
- Web Server: Apache & IIS
- MATLAB
- Netbeans: Java
- SPARQL, SQL Server, MySQL
- Cisco Packet Tracer: Networking

Research Skills & Software

- Literature Review: Data collection and Analysis
- Critical Thinking & Synthesis
- Time Management & Organization
- Identifying a Research Problem
- Academic Writing: Latex (TexWorks)
- HSPICE & MicroCAP Circuit Simulator

IT & Other Skills

- Design Websites (E-commerce,...)
 - Domain Names & Hosting
 - Maintenance Computers, Laptops, and Solar ON/OFF Grid Systems
 - Maintenance Dental Machines (CBCT, I-CAT, VISTASCAN,RVG)
 - Creating many programs using SQL Server, MS Access, C#, VB.NET
 - Windows Server: Active Directory, DHCP, DNS , ISA Server
 - Hacking Tools: Linux, PHP , Apache server, MySQL database, etc
 - Surveillance Cameras, DVR, Access Door
 - Configuration Moodle
 - Virtual Servers Machines: VMWare
 - Data Backup & Recovery
 - SQL Server Database Replications
 - WAN & LAN Troubleshooting (CISCO)
 - Voice over IP (VoIP) CISCO Machines
 - AutoCAD Drawing
 - Photoshop Design
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Services

- (2019-Present) **Reviewer for several Peer-Reviewed Journals: (90+ Papers)**
 - (2019-Present) **TPC (Technical Program Committee) member on several conferences**
 - (2025) **Session Chair** on The Sixth Int. Conf. on Advances in Computational Tools for Engineering Applications (ACTEA)
 - (2024) **Finance co-Chairs member** on The 2nd Int. Conf. on Smart Systems and Power Management (IC2SPM)
 - (2021) **Tutorial: How to Simulate Ternary logic Circuits from A to Z Using CNFET and Implemented in HSPICE Simulator?** on 2021 International Conference on Microelectronics (ICM)
 - (2020-2021) **Assistant External Examiner:** For a Ph.D. candidate at RMIT University, Australia
 - (2019-2023) **Professional activities coordinator & webmaster** of the IEEE Lebanon Joint Chapter IE13/PE31/CAS04/PEL35 (Industrial Elect., Power & Energy, Circuits and Systems, Power Electronics)
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Research Interest

- Microelectronics for Embedded Systems, IoT Devices, & AI
 - Multiple-Valued Logic (MVL) Circuit Design
 - Hardware Encryption
 - Health Care Circuit Design
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Academic Experiences

- (1) **Notre Dame University - Faculty of Engineering** LEBANON
- **Assistant Professor (Part-time) at Shouf Campus** 1/2025 – Present: (4m)
- (2) **Researcher with different Universities** LEBANON, KSA, FRANCE, IRELAND, MALAYSIA, KOREA, INDIA
- **Freelance Researcher in Embedded Systems, and AI.** 1/2021 – Present: (4 years, 10 months ago)
- (3) **Beirut Arab University - Faculty of Engineering** LEBANON
- **Assistant Professor** 9/2020 – 12/2022: (2y 3m)
- **Lab Instructor & Lecturer** 9/2006 – 8/2020: (14y)
- (4) **Qatar University - College of Engineering** QATAR
Researcher (Remote Part-Time) 2/2021 – 8/2021: (7m)
- For the first time, applying the Multiple-Valued Logic system in a Haptic device
- Two Journal papers in IEEE ACCESS (Q1)
- (5) **IRC NGO (International Rescue Committee)** LEBANON
Trainer (Computer & Smart Phone Maintenance) 1/2015 – 4/2015: (3m)
- (6) **Lebanese University - Faculty of Sciences** LEBANON
Lab Instructor 10/2006 – 9/2010: (4y)

Business & Other Experiences

- (7) **JABERPC & Technology Co. (Startup)** LEBANON
Entrepreneur & Owner 1/2023 – Present: (2 years, 10 months ago)
www.jaberpc.technology
- Sale & Maintenance: Computers, and Solar Systems

- (8) **SENSONEO Co.** SLOVAKIA
Business Development Manager in the MENA Region (Remotely) 5/2021 – 12/2023: (2y 7m)
www.sensoneo.com
- Smart Cities, and waste management solutions: IoT Fill Level Sensors
- (9) **Lebanese University** LEBANON
- **Faculty of Dental Medicine: IT Manager** 2/2014 – 12/2018: (4y 10m)
- **Doctoral School of Science and Technology: IT Engineer** 1/2008 – 12/2009: (1y)
- **Faculty of Sciences: System Administrator** 10/2006 – 10/2010: (4y)
- (10) **AluMarket (Chouman Group): Aluminum wholesaler** LEBANON
- **Business Development & IT Manager** 6/2005 – 12/2017: (12y 6m)
- (11) **Ministry of Defense Lebanese Armed Forces** LEBANON
- **Army Lieutenant (Developer Engineer):** www.lebarmy.gov.lb 2/2002 – 2/2003: (1y)
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Certifications

1. Introduction to Artificial Intelligence AI ICDT - Lebanon - 2021
 2. The Basic Principles of Citizen Service OMSAR - Lebanon - 2019
 3. Ethical Hacker AIAE (American Institute for Applied Education) - USA - 2019
 4. Certified Ethical Hacker - CEH ICDT - Lebanon - 2019
 5. Basics of Management OMSAR - Lebanon - 2017
 6. Introduction to Cyber Security CISCO - USA - 2017
 7. Green Energy Promoter European Union (GR.ENE.CO) - Lebanon - 2014
 8. CCNA- Routing Protocols and Concepts CISCO - USA - 2010
 9. CCNA- Network Fundamentals CISCO - USA - 2010
 10. Assembly & Maintenance Computers BAU - Lebanon - 1999
 11. Volunteer in Lebanese Red Cross First Aid Teams 1996 - 2001
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Education

- Beirut Arab University** DEBBIEH, LEBANON
- **Ph.D. in Computer Engineering** 2016 – 2020
 - Dissertation Title:
“Multiple-Valued Logic Circuit Design and Data Transmission Intended for Embedded Systems.”
 - Committee:
 1. **Prof. Ali Haidar:** Committee Chair and Computer Eng. Program Coordinator at BAU
 2. **Prof. Ziad Osman:** Chair of Electrical & Computer Eng. Dept. at BAU
 3. **Associate Prof. Issam Damaj:** Director of the Center for Quality Assurance at BAU
 4. **Prof. Mohamed Dbouk:** Director of L'ARiCoD: Lab of Advanced Research in Intelligent Computing & Data, and Master Coordinator at Lebanese Univ.
 5. **Prof. Mohamad Sawan:** Chair Professor at Westlake University, Hangzhou, China and Canada Research Chair at Polytechnique Montreal, Canada
 - **Master in Computer Engineering & Informatics** 2008 – 2010
 - Thesis Title: “Applications and Study of Network Flow Algorithms.”
 - **Bachelor in Computer Engineering** 1996 – 2001
 - Project Title: “Hotel Management & Online Reservation System.”
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Memberships

- The Lebanese Order of Engineers and Architects 2002 – Present
- The Institute of Electrical and Electronics Engineers (IEEE) 2017 – 2022
- Lebanese Red Cross – First Aid & Trainer 1996 – 2001
- Jeunesse Anti Drogues (JAD) 1998 – 2004
- Green Peace 1998 – 2006

Languages

- Arabic (Mother Tongue)
- English (Professional)
- French (Intermediate)

Peer-Reviewed Publications: 23 + 2 papers

Google Scholar: <https://cutt.ly/Mm46111>

- Published: 23
- Under Review: 1
- Under preparation: 1

Submitted as First Author (Under Review):

1. **R.A. Jaber**, et al., "*Design of a Ternary Half-Adder Using a Decoder-Based Architecture*"

Published Peer-Reviewed Journals:

1. Furqan Zahoor, **R.A. Jaber**, et al., "*Design implementations of ternary logic systems: A critical review*," Results in Engineering journal, Volume 23, **2024**, <https://doi.org/10.1016/j.rineng.2024.102761>.
2. Bazzi HS, **R.A. Jaber**, El-Hajj AM, Hija FA, Haidar AM, *Enhanced CPU Design for SDN Controller in Micro-machines Journal* **2024**; 15(8):997. <https://doi.org/10.3390/mi15080997>
3. D. Etiemble, and **R.A. Jaber**, "*Comparing Unbalanced and Balanced CNTFET Ternary Adders and Multipliers*," in **Asian Journal of Research in Computer Science (AJRCOS)**, vol. 16, issue 4, pp. 396-417, **2023**, DOI: 10.9734/AJRCOS/2023/v16i4400
4. D. Etiemble, and **R.A. Jaber**, "*Design of (3,2) and (4,2) CNTFET Ternary Counters for Multipliers*," in **Asian Journal of Research in Computer Science (AJRCOS)**, vol. 16, issue 3, pp. 103-118, **2023**, DOI: 10.9734/AJRCOS/2023/v16i3349.
5. **R.A. Jaber**, et al., "*Ternary Full Adder Designs Employing Unary Operators and Ternary Multiplexers*," in **Micromachines (IF= 3.5, Q2)**, vol. 14, pp. 1065, **2023**, DOI: 10.3390/mi14051064.
6. **R.A. Jaber**, et al., "*Ultra-Low Energy CNFET-Based Ternary Combinational Circuits Designs*," in **IEEE Access (IF= 4.8, Q1)**, vol. 9, pp. 115951-115961, **2021**, DOI: 10.1109/ACCESS.2021.3105577.
7. J. M. Aljaam, **R. A. Jaber** and S. A. Al-Maadeed, "*Novel Ternary Adder and Multiplier Designs Without Using Decoders or Encoders*," in **IEEE Access (IF= 4.8, Q1)**, vol. 9, pp. 56726-56735, **2021**, DOI: 10.1109/ACCESS.2021.3072567.
8. **R. A. Jaber**, Abdallah Kassem, Ahmad ElHajj, Lina Nimri, Ali Haidar, "*CNFET-Based Designs of Ternary Half-Adder using a Novel "Decoder-less" Ternary Multiplexer based on Unary Operators*," **Microelectronics Journal (IF= 3, Q2)**, Feb **2020**, DOI: 10.1016/j.mejo.2019.104698.
9. **R. A. Jaber**, Abdallah Kassem, Ahmad ElHajj, Lina Nimri, Ali Haidar, "*High-Performance and Energy-Efficient CNFET-Based Designs for Ternary Logic Circuits*," **IEEE Access (IF= 3.9, Q1)**, July **2019**, DOI: 10.1109/ACCESS.2019.2928251.

Published Peer-Reviewed Conferences:

1. **R.A. Jaber**, et al., "*Proposed a Ternary Multiplexer using CNTFET*," the 32nd IEEE International Conference on Electronics, Circuits and Systems, Marrakech, Morocco, 17-19 November, 2025.
2. **R.A. Jaber**, et al., "*Proposed a Ternary Inverter and a Ternary Decoder using CNTFET*," ACTEA'25. The Sixth International Conference on Advances in Computational Tools for Engineering Applications, NDU, Lebanon, September 24-26, 2025.
3. **R. A. Jaber**, H. S. Bazzi, A. Kassem and A. M. Haidar, "*Proposed Two Ternary Decoders Using CNTFET*," 2024 Int. Conf. on Microelectronics (ICM), Doha, Qatar, **2024**, pp. 1-4, doi: 10.1109/ICM63406.2024.10815865.

4. **R. A. Jaber**, H. Bazzi, A. Haidar, B. Owaidat and A. Kassem, "*1-trit Ternary Multiplier and Adder Designs Using Ternary Multiplexers and Unary Operators*," 2021 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT), **2021**, pp. 292-297, doi: 10.1109/3ICT53449.2021.9581366.
5. **R. A. Jaber**, Abdallah Kassem, Ahmad ElHajj, Ali Haidar, "*A Novel CNFET-Based Ternary to Binary Converter Design in Data Transmission*," The IEEE 32st International Conference on Microelectronics (**ICM 2020**), Aqaba, Jordan, 14-17 Dec. 2020, pp. 1-4, doi: 10.1109/ICM50269.2020.9331769.
6. **R. A. Jaber**, Abdallah Kassem, Ali Haidar, "*CNTFET-Based Design of Ternary Multiplier using Only Multiplexers*," The IEEE 32st International Conference on Microelectronics (**ICM 2020**), Aqaba, Jordan, 14-17 Dec. 2020, pp. 1-4, doi: 10.1109/ICM50269.2020.9331806.
7. **R. A. Jaber**, Bilal Owaidat, Abdallah Kassem, Ali Haidar, "*A Novel Low-Energy CNTFET-Based Ternary Half-Adder Design using Unary Operators*," The IEEE International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (**3ICT 2020**), Sakheer, Bahrain, 20-21 Dec. 2020, pp. 1-6, doi: 10.1109/3ICT51146.2020.9311953.
8. **R. A. Jaber**, Abdallah Kassem, Ahmad ElHajj, Lina Nimri, Ali Haidar, "*A Novel Binary to Ternary Converter using Double Pass-Transistor Logic*," The 31st International Conference on Microelectronics (**ICM 2019**) by IEEE, 15-18 Dec. 2019, Cairo, Egypt, DOI: 10.1109/ICM48031.2019.9021886.
9. **R. A. Jaber**, Ahmad ElHajj, Lina Nimri, Ali Haidar, "*A Novel Implementation of Ternary Decoder Using CMOS DPL Binary Gates*," International Arab Conference on Information Technology (**ACIT 2018**) by IEEE, **28-30 Nov. 2018**, Lebanon, DOI: 10.1109/ACIT.2018.8672698.
10. **R. A. Jaber** and Ali HAIDAR, "*Ternary Data Transmission between Hosts*," the 23rd International Scientific Conference **LAAS, 6 – 7 April 2017**, Beirut, Lebanon.
11. A. Belal, B. Owaidat, N. Saleh, **R. A. Jaber**, "*Error correction capabilities in block ciphers*," 2012 2nd International Conference on Advances in Computational Tools for Engineering Applications (**ACTEA**) by IEEE, **12-15 Dec. 2012**, Lebanon, DOI: 10.1109/ICTEA.2012.6462905.

Tutorial in Conferences:

1. **R. A. Jaber**, "How to Simulate Ternary logic Circuits from A to Z Using CNFET and Implemented in HSPICE Simulator?," 2021 International Conference on Microelectronics (ICM), DOI: 10.1109/ICM52667.2021

Books:

1. **R. A. Jaber**, et. al., "Chapter 6: The Convergence of AI and BCIs: A New Era of Brain-Machine Interfaces," in Title:"Artificial Intelligence in the Age of Nanotechnology" Jaber, Wassim, editor. IGI Global, 2024. <https://doi.org/10.4018/979-8-3693-0368-9>