

GHINA EL-WALY

COMPUTER ENGINEER / UNIVERSITY LECTURER / QUANTUM COMPUTING RESEARCHER

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PROFESSIONAL PROFILE

Computer engineer, full-time lecturer, and PhD candidate at Beirut Arab University, specializing in quantum error correction and surface-code decoding. Brings nearly a decade of university teaching across digital systems, computer architecture, microprocessors, programming, and databases, together with industry experience in software delivery, data analytics, and information security. Presented peer-reviewed research at IEEE ICONET 2026 and has served for several years on the Scientific Committee of the Order of Engineers & Architects, Tripoli.

CORE PROFESSIONAL STRENGTHS

Quantum Error Correction & Decoding • University Teaching & Laboratory Instruction • Full-Stack Software Engineering • Data Analytics & Reporting • Information Security • Scientific Event Organization

EDUCATION

PhD Candidate, Computer Engineering	Beirut Arab University	2023–Present
Master 2, Software Engineering	Lebanese University	2016–2017
Bachelor of Engineering, Computer Engineering	Beirut Arab University	2011–2016

RESEARCH & PUBLICATIONS

Doctoral Research	Beirut Arab University	2023–Present
• Research in quantum error correction, focused on improving surface-code decoders through ensemble, structured, and machine learning-assisted decoding methods.		

Conference Publications

[1] **G. W. El Waly**, Y. El Traboulsi, A. M. Haidar, and H. S. Bazzi, "Frozen Structured-K3: Deterministic Geometric Ensembling for Graphlike Surface-Code MWPM," in *Proc. 2026 IEEE Int. Conf. Intelligent Computing and Next-Generation Technologies (ICONET)*, Debbieh, Lebanon, Oct. 2026. Presented in person, 15 October 2026; to appear in IEEE Xplore.

ACADEMIC APPOINTMENTS

Full-Time Lecturer, Computer Engineering	Beirut Arab University	2023–Present
• Teach core undergraduate courses in digital systems, computer architecture, microprocessors, programming, database systems, and robotics, linking lecture material to laboratory practice and applied problem-solving.		
• Contribute to departmental work through student activities, quality control, and alumni engagement.		
Laboratory Instructor, Engineering & Science	Beirut Arab University	2017–2023
• Delivered laboratory-based teaching and supported students in hands-on computing and engineering coursework.		

PROFESSIONAL EXPERIENCE

Data Analyst, Developer & Information Security Specialist	Haykel Hospital	2018–2023
• Developed and managed data analysis, management dashboards, and reporting tools supporting institutional decision-making.		
• Contributed to software development, data management, and digital security auditing.		
Systems Manager	Safadi Office	2018–2022
• Managed software systems and led end-to-end election software projects, covering database design, full-stack implementation, and reporting.		

ACADEMIC TEACHING AREAS

Digital Systems I & II • Digital Systems Design • Computer Architecture • Microcomputers • Microprocessor Organization & Design • Microprocessor Interfacing • Programming I • Database Systems • Robotics

LEADERSHIP & PROFESSIONAL SERVICE

Member, Tripoli Alumni Committee	Beirut Arab University	2023–Present
Secretary, Scientific Committee	Order of Engineers & Architects, Tripoli	2019–2024
Member, Council of Delegates	Order of Engineers & Architects, Tripoli	2024
Member, Social Committee	Order of Engineers & Architects, Tripoli	2018–2022
Board Member	Rawdat El-Fayhaa Alumni Association	2024–Present
Coordinator, Technology & Media Committee	Rawdat El-Fayhaa Alumni	2018–2020

SELECTED CONFERENCES & EVENTS

- IEEE ICONET 2026, Beirut Arab University, Debbieh — paper presentation (October 2026).
- SUMO Robotics Competition for School Students — Beirut Arab University (2026).
- Rise of AI — two-day conference and workshop, Education Development Center / USAID (2023).
- Organized scientific seminars, technical workshops, and professional conferences through the OEA Scientific Committee.

RECOGNITION & PROFESSIONAL DEVELOPMENT

- Recipient of multiple recognition trophies for contributions to organizing scientific and professional events at the OEA–Tripoli.
- Microsoft Certified Educator (2024); Work Ready Now, EDC / USAID (2024); Public Speaking Workshop, BAU (2025).

TECHNICAL SKILLS

Programming & web: Python, C, C++, C#, Java, JavaScript, PHP, Visual Basic, HTML5, CSS, React
Platforms & data: ASP.NET, .NET, Android, SQL, MySQL; database design, analytics, reporting, information security
Languages: Arabic, English, French