

Research Interests	I am keen on doing research in data centered AI, machine learning, and neural networks. I am open to working on any project related to these areas.	
Education	Texas A&M University , Qatar Campus	Aug 2023-Present
	Bachelor of Science with Honors	Graduation: May 2027 (expected)
	Specialization: Electrical Engineering with minor in Mathematics	
	Award: Engineering Honors Program	
	ELARAKI International School , Marrakech, Morocco	Sept 2020-June 2023
	Baccalaureate with Distinction (French) - Physical Sciences	
	The American Academy , Salt Lake City, Utah, USA	Sept 2020-June 2023
	American High School Diploma with Honors - Pursued online simultaneously with my baccalaureate.	
Research Experience	Research Collaborator , Undergraduate Research Experience Program	Jan 2025-Present
	Qatar Research, Development and Innovation Council	
	<ul style="list-style-type: none">Leveraging data analytics methods, including machine learning, and other methods, to interpret historical Dissolved Gas Analysis (DGA) data to improve fault detection and transformer condition monitoring.Leading a 1-year research project focused on data analytics for interpreting transformer DGA.	
	Undergraduate Research Assistant , with Dr. Selma Awadallah	Feb 2024-Dec 2024
	Electrical and Computer Engineering Department, Texas A&M University	
	Dissolved Gas Analysis for Transformers	
	<ul style="list-style-type: none">Managed project that focused on Dissolved Gas Analysis (DGA) for transformers, aiming to create a publicly accessible DGA monitoring database.Created and managed a specialized SQL database using MySQL for DGA data analysis, and authored a comprehensive user guide for it.Collected and analyzed data from over 1,000 samples across 900+ oil-filled transformers for detailed DGA analysis, also processed and cleaned it for ready use.Created +10 Python and SQL scripts for specific data extraction within the database.Effectively worked with XAMPP and phpMyAdmin for remote DB access and management.Conducted in-depth literature reviews and composed detailed research report.	
	Mentor/Assistant , High School Research Experience Program	Feb 2024-Dec 2024
	Qatar Research, Development and Innovation Council in collaboration with Texas A&M University	
	Effect of Heat on Solar Panel Efficiency Project	
	<ul style="list-style-type: none">Mentored two selected high school students in their research projects focused on the effect of heat on solar panel efficiency in Qatar across different seasons.Conducted and supervised weekly data collection using the HOBO monitoring device and sensors to track on temperature, wind speed, direction, and solar radiation. Over the span of 10 months.	
Other Experience	Qatar Foundation - Student Housing, <i>Front Desk Assisstant</i>	Nov 2024-Present
	TAMUQ - Marketing and Communications Department, <i>Student Assistant</i>	Oct 2024-Present
	Izu Studio - Motion Design Agency, <i>Founder & Motion Designer</i>	June 2020-Aug 2024
	LAMALIF Group - Information Technology and Finance Department, <i>Intern</i>	Summer 2020
Technical Skills	Programming Languages, Tools, Frameworks, Concepts:	
	<ul style="list-style-type: none">Programming Languages: Python, SQL, C Language, Verilog HDL, HTML, CSS.Machine Learning and Data Analysis Libraries: scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, SciPy, SymPy.	

- **Software Tools and IDEs:** Intel Quartus II, Jupyter Notebook, VS Code, MobaXterm, MySQL Workbench, phpMyAdmin, XAMPP, HOBOLink.
- **Design and Media Tools:** Blender, LaTeX, Adobe Suite (After Effects, Media Encoder, Photoshop, Illustrator), Microsoft Office Suite (Excel, Word, PowerPoint).

Projects	ECEN 248 - Hexadecimal 7-Segment Synthesizer with Dr. Hussein Alnuweiri Fall 2024														
	<ul style="list-style-type: none"> • Designed a Fan-In Constrained Hexadecimal Synthesizer integrated into a 16-bit counter system. • Systematically optimized logic circuits using Karnaugh maps and Boolean algebra, achieving a 33% reduction in gate count, and hardware requirements while maintaining circuit accuracy and functionality. • Developed unoptimized and optimized versions of the 7-segment decoder; rigorously tested functionality and quantified performance improvements in propagation delay and resource utilization. • Introduced advanced techniques to minimize logical overlaps and maximize circuit efficiency, aligning with constraints on fan-in and hardware costs. 														
Poster Presentations	M. R. Barhdadi , advised by Dr. Selma Awadallah. <i>Transformer Monitoring: A Comprehensive Multidimensional Database for Dissolved Gas Analysis</i> . [Poster]. Presented at the Hamad Bin Khalifa University STEAM Showcase, 2024.														
Selected Achievements	<p>2024 Winner of Qatar Foundation Technology-Based Ideas Pitch Competition – \$11,000 investment.</p> <p>2024 Awardee of the selective Undergraduate Research Experience Program (UREP 31-043-2-014) by Qatar Research Development and Innovation Council (QRDI) – \$1,500.</p> <p>2024 2nd Place Texas A&M University Qatar Robotics Competition.</p> <p>2024 Lead Organizer and Mentor in “Effective Humanitarian Engineering Solutions Workshop”.</p> <p>2024 Successfully Completed: Machine Learning for Facies Classification Workshop by SLB.</p> <p>2024 Successfully Completed: Arduino Programming Course by TAMUQ EEP.</p> <p>2023 Successfully Completed: Engineering Asset Management in Power Grids Workshop.</p> <p>2023 Inducted in Engineering Honors Program at Texas A&M-Q.</p>														
Leadership and Community Involvement	<table> <tr> <td>The Peace Club TAMU-Q, <i>President</i></td><td>Spring 2025</td></tr> <tr> <td>The Peace Club TAMU-Q, <i>Vice-President</i></td><td>Fall 2024</td></tr> <tr> <td>Qatar Foundation, <i>Student Orientation Leader</i></td><td>Fall 2024</td></tr> <tr> <td>Qatar Foundation Convocation 24', <i>Student Volunteer</i></td><td>Spring 2024</td></tr> <tr> <td>IEEE, <i>Student Member</i></td><td>Fall 2023-Present</td></tr> <tr> <td>IEEE Student Chapter, <i>Class Representative</i></td><td>Fall 2023-Spring 2024</td></tr> <tr> <td>Moroccan National Swimming Federation, <i>Instructor Volunteer</i></td><td>Summer 2022</td></tr> </table>	The Peace Club TAMU-Q, <i>President</i>	Spring 2025	The Peace Club TAMU-Q, <i>Vice-President</i>	Fall 2024	Qatar Foundation, <i>Student Orientation Leader</i>	Fall 2024	Qatar Foundation Convocation 24', <i>Student Volunteer</i>	Spring 2024	IEEE, <i>Student Member</i>	Fall 2023-Present	IEEE Student Chapter, <i>Class Representative</i>	Fall 2023-Spring 2024	Moroccan National Swimming Federation, <i>Instructor Volunteer</i>	Summer 2022
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Languages	English (Fluent), French (Fluent), Arabic (Native)														
References	<p>Dr. Hussein Alnuweiri Professor of EE at Texas A&M University Qatar, Email: alnuweiri@tamu.edu.</p> <p>Dr. Selma Awadallah Assistant Professor of EE at Texas A&M University Qatar, Email: selma.awadallah@tamu.edu.</p>														