Jasem Alkhashti

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EDUCATION

University of Miami **Coral Gables, FL**
Bachelor of Science in Computer Engineering *Aug 2021 - May 2025*
GPA: 3.89 / 4.00
Honors: President's Honor Roll, Provost's Honor Roll, Dean's List
Relevant Coursework: Computer Organization and Design, Structured Digital Design, Digital System Design and Testability, Database Design and Management, Software Engineering and Architecture, Embedded Systems, Communication Networks, Systems Programming, Algorithms, Computer Operating Systems, Senior Project I, Senior Project II.

PROFESSIONAL SKILLS

Languages: C++, VHDL, Python, C, Java, Verilog, MySQL, ARM Assembly, BCPL, MATLAB.
Frameworks/Technologies: DE1-SoC FPGA board, NEXYS 4 FPGA board, Unix, MySQL Workbench, Vivado, ModelSim, Quartus Prime, Platform Designer, Arduino, Arduino IDE, PSpice, Visual Studio Code, PyCharm, IntelliJ IDEA, Excel, AutoCAD, Visual Studio 2010, Visual Studio 2022.

LEADERSHIP AND PROFESSIONAL EXPERIENCE

Computer Organization and Design (ECE414) & Digital Design Laboratory (ECE315) **Coral Gables, FL**
Lab / Teaching Assistant *Aug 2024 - Present*
- Held weekly sessions lecturing and aiding over 45 students in designing and implementing complex dataflow projects in VHDL & Schematics.
- Provided assistance with debugging RTL simulations and verifications in large complex systems by hosting office hours multiple times a week.

NVIDIA Student Network Program **Coral Gables, FL**
Designated Lead *Jan 2025 - Present*
- Spearheaded the NVIDIA Student Network program for Eta Kappa Nu, facilitating access to exclusive AI training, tools, and hands-on projects in data science, computer vision, speech AI, and more.
- Worked with NVIDIA to organize workshops and events, offering skill-building sessions and career development opportunities.
- Fostered a dynamic environment for students, promoting resources and encouraging participation in AI initiatives.

Bonsai Applied Computational Group **Coral Gables, FL**
Physics Researcher *Jan 2025 - Present*
- Conducted interdisciplinary research in physics, collaborating with faculty and peers to explore computational models and experimental techniques.
- Worked with large datasets to conduct statistical analysis, identifying patterns & providing actionable insights for physics-based applications.

Eta Kappa Nu (HKN, IEEE) Honor Society **Coral Gables, FL**
Manager of Internal and External Affairs *Sep 2023 - Present*
- Facilitated activities and events by proactively establishing partnerships with diverse student organizations, faculty departments, and external industry representatives; increased collaborative opportunities and boosted organizational visibility both on and off campus.
- Delivered personalized tutoring sessions in engineering coursework, enhancing academic performance among undergraduate students.

Tau Beta Pi (TBP) Honor Society **Coral Gables, FL**
Treasurer *Sep 2024 - Present*
- Managed the organization's financial operations, including budgeting, expense tracking, and fund allocation to ensure financial sustainability.
- Oversaw fundraising efforts and coordinated financial planning for events, contributing to the growth and success of chapter activities.
- Ensured allocation of travel funds to national conferences, strengthening connections with other chapters & representing UMs chapter.

College of Engineering, University of Miami **Coral Gables, FL**
Engineering Student Ambassador *Jan 2024 - Present*
- Participated in student panels, providing valuable information to 50+ prospective students and their families about UMs College of Engineering.
- Led informative tours for prospective students, highlighting the CoE's facilities, resources, and student life to aid in their decision-making process.

PROJECTS

Quantum Emulation on FPGAs | *VHDL, Python, ModelSim, Quartus Prime, Visual Studio Code, FPGA board*
- Designed a physics-based Quantum system of an FPGA, modeling the state evolution of qubits.
- Leveraged FPGAs mass-parallelism to execute matrix exponentiation in constant time complexity O(1).
- Developed a user-friendly GUI to seamlessly communicate via USB and UART with the FPGA, enabling real-time control of emulation parameters and visualization of emulation results.

MIPS Architecture RISC CPU | *Verilog, Vivado, NEXYS 4 FPGA board*
- Designed and implemented a 16-bit RISC CPU, engineered with streamlined instruction set and simplified architecture.
- Employed RTL viewer and waveforms to expose data transfer and timing issues in our design.

Advanced Digital Signal Processor | *VHDL, ModelSim, Quartus Prime, DE1-SoC FPGA board*
- Implemented the ADSP-2100 digital signal processor to perform specific computations based on the instruction.
- Integrated Built-In-Self-Test (BIST) architecture to generate signatures and expose faults within our design.

Rotor-Based Encryption Machine | *VHDL, ModelSim, Quartus Prime, DE1-Soc FPGA board*
- Developed a VHDL-based model of the Enigma M3, featuring 3 dynamic rotors with rotational functionality and a reflector component.
- Verified data transfer and timing issues of the system design using RTL viewer and waveforms.

SKILLS & ACTIVITIES

Languages: Arabic (Native); English (Fluent); Hindi (Proficient).
Certifications & Training: Loyac - Fursan Alsena'a – Industrial Development Workshops, Private Pilot License (PPL).
Personal Interests: Basketball, Boxing, Chess, Cooking, Drawing, Finance, International Travel, Pottery, Soccer, Social Activities, Volleyball.