HAKEEM SADIQ

Computer Engineer

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SUMMARY

I am a diligent FPGA/Embedded Computer Engineer with experience in design, development, and verification of both hardware and software projects. I am a proactive learner with genuine passion for hardware, excited to progress technology into the future.

PROJECTS

Development of the Double Frequency (19F/1H) Coil for a Clinical PET/MRI Scanner

Lawson Health Research Institute

- Designed and constructed High-pass Birdcage Radio-frequency (RF) coil to function at 19F frequency (115Mhz)
- Designed RF shield to adjust frequency of the coil to 122MHz

Communication Protocols (UART, SPI, I2C)

- Implemented UART Transmitter and Receiver Protocols on Basys3 FPGA (VHDL)
- Completed SPI Master and Slave on Basys3 FPGA (VHDL)
- Instantiated I2C Master Core (Verilog)
- Modules include: Edge Detects, Counters, Shift Registers, Processing Units, Clocks, and State Machines

Basic Processor

- Developed 16 instruction processor on Basys3 FPGA (VHDL)
- Provides arithmetic, logic, and register control operations
- Modules Include: Registers, Control Unit, ALU, Multiplexer, Binary-to-BCD Unit

Simple VGA Display

- Created simple VGA controller using Basys3 (VHDL)
- Engineered VGA controller to output simple user-controlled visual data to monitor at 60Hz
- Modules include: Display Control unit, VGA Control Unit, Vertical Sync, Horizontal Sync, Clock

ADDITIONAL EXPERIENCE

Supervisor

BTRMLK

03/2022 - Present

- Oversee inventory management and acquisition, increasing storage efficiency by 30%
- In depth knowledge of all positions and work stations in the workplace
- Lead team guiding all employees, ensuring all tasks delegated, quality service provided, and minimal wait times achieved
- Innovated multiple standardized techniques taught to new hires, improving on-boarding time by 20%

EDUCATION

B.E.Sc. Computer Engineering

University of Western Ontario

09/2016 - 05/2020

B.Sc. Medical Physics

University of Western Ontario

09/2020 - 2022

SKILLS

Programming Languages and Technologies

VHDL | Verilog | SystemVerilog | C++ | C | FreeRTOS | Python | MATLAB | Java | Assembly | Git | C#

CAD/Design Tools

Xilinx Vivado | ModelSim | Quartus | ESP-IDF | Cadence

Technical Skills

Computer Architecture | FPGA Design/Verification | RTL Design | Universal Verification Methodology | Digital System Design | Real Time Operating Systems | Digital Signal Processing | Object Oriented Programming | Linux Operating Systems