

HAKEEM SADIQ

Computer Engineer

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📍 London, Ontario

SUMMARY

I'm an FPGA Computer Engineer with experience in both hardware and software projects.

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 an RF shield to change the resonance frequency of the coil to 122MHz

UART Communication Protocol

- UART Transmitter and Receiver Protocols implemented on Basys3 FPGA (VHDL)
- UART Frame used: Start Bit (1), Data (N), and Stop Bit (1)
- Modules include: Edge Detects, Counters, Shift Registers, Processing Units, Clocks, and State Machines

Basic Processor

- 16 instruction processor implemented on Basys3 FPGA (VHDL)
- Arithmetic, logic, and register control operations
- Components Include: Registers, Control Unit, ALU, Multiplexer, Decoder

Binary to BCD Converter

- 8 bit binary input converted to BCD (Verilog, VHDL)
- BCD code displayed on Basys3's seven segment display
- Modules include: Multiplexer, Decoder, Clock, Counter, Converter

Fan Controller

- Arduino controller (C++)
- Receives input speed, 0-5 from keyboard, adjust fan based on input, and outputs fan speed setting (LOW, MEDIUM, or HIGH) to an LCD

EXTRACURRICULARS

Head Coach

WesternU Women's Football Team

📅 08/2019 - 06/2022

- Plan, schedule, and run all practices, meetings, and team events
- Coached team to an 18-0 record in the OWIFA league, winning all 3 tournaments participated in as a first year head coach
- 16-1 record winning 4 out of 5 tournaments including 2 provincial championships and placing top 5 in the nation in 2022

EDUCATION

B.E.Sc. Computer Engineering

University of Western Ontario

📅 09/2016 - 05/2020

B.Sc. Medical Physics

University of Western Ontario

📅 09/2020 - 2023

SKILLS

Programming Languages and Technologies

VHDL

Verilog

C++

C

C#

microC

Python

MATLAB

Java

JavaScript

Assembly/Machine

nodeJS

SQL

Android Studio

Flutter

HTML5

Firebase

CAD/Design Tools

Xilinx Vivado

Quartus

Cadence

Eagle

MicroCap

Technical Skills

Computer Architecture

FPGA Design

FPGA Simulation

FPGA Verification

Digital System Design

Digital Signal Processing

Embedded systems

Socket programming