Ali Dahir: FPGA Developer

❖ https://www.github.com/AliDa-Eng ❖ https://www.linkedin.com/in/dahir-ali

PROFESSIONAL SUMMARY

Electrical Engineering graduate passionate about digital hardware development and verification. Practical experience in FPGA-based system design, RTL simulation, and testbench creation. Currently developing skills in ASIC verification using SystemVerilog, UVM, and assertion-based methodologies. Strong foundation in Verilog, testbench design, simulation and synthesis in Vivado Design Suite. Collaborative team player with a commitment to continuous learning and project delivery.

EDUCATION

Carleton University **Ottawa, ON**
B.Sc. Electrical Engineering *June, 2024*
- IEEE Student Branch (2024)

PROJECTS GitHub Portfolio (Videos + Source Code): [https://github.com/AliDa-Eng]

Hoverpod X – PWM + PID Servo Control

Tools: Vivado XSIM, Verilog, Basys 3 FPGA, Servo, BLDC, ESC

- Simulating PWM signal generation and validating ESC signal logic.
- Debugging PID control for platform stabilization and iPhone mount tracking.
- Developing pwm_generator.v and integrating wave analysis tools.
- UVM testbench structure, assertions, and functional coverage collection.

FPGA Timer System

Tools: Vivado XSIM, Verilog, Basys 3 FPGA, IP Clock wizard

- Designed a real-time digital countdown timer using FSM logic.
- Used waveform simulation, clock division, and timing constraint analysis.
- Documented design specs, synthesis results, and simulation outputs.

Autonomous Maze Solving Car (C, Arduino, Embedded Systems)

Tools: Arduino (C), Ultrasonic Sensors, LEDs, PWM

- Implemented embedded control logic and obstacle avoidance using state machines.
- Tuned sensor thresholds and optimized motor behavior through debugging.
- Demonstrated successful autonomous navigation in variable environments.

WORK EXPERIENCE

Prodigy Services **Jul. 2024 – Present**
Full Stack Developer *Barrie, ON*
- Built secure user-document management platform (ProdigySecure) using PHP, MySQL, and JavaScript.
- Improved backend performance by optimizing data handling and system design.
- Applied structured testing and project documentation practices during development.

Honda **May. 2022 – Jan. 2023**
Wiring Zone Tech *Alliston, ON*
- Supported production on the Civic production line (wiring, crash sensors, fuel systems).
- Conducted tests, logged procedures, and complied with ISO documentation standards.
- Operated diagnostic tools (Airbag, Torque, Fuel tank assist) to troubleshoot systems.
- Worked under supervision, collaborating with engineers and technicians to resolve daily faults.

TECHNICAL SKILLS

- **HDL Languages:** Verilog, SystemVerilog , VHDL
- **Verification Concepts:** UVM , assertions, random stimulus, functional coverage, regression testing
- **Programming:** Python, C, PHP, SQL
- **Hardware/Tools:** Nexys A7, Basys 3, Altera MAX V, Arduino, Oscilloscope, Logic Analyzer
- **Software:** Vivado, Quartus Prime, Vivado XSim, MATLAB, MySQL
- **Protocols:** UART, SPI, PWM
- **Core Concepts:** RTL design, FSMs, simulation, synthesis, testbenches, coverage metrics

References

Company Name	Contact Name	Relationship	Contact info
Honda	Peter R.	Supervisor	Available upon request
Honda	Robert M.	Team Lead	Available upon request
Honda	Gary H.	Colleague	Available upon request
Prodigy Services	Moe F.	Manager	Available upon request
Prodigy Services	Subear A.	Developer / Colleague	Available upon request
Carleton University	Yosef K.	Professor / Mentor	Available upon request
Carleton University	Mejd A.	Project Partner	Available upon request

Note: Contact details for references are available upon request to respect the privacy of the individuals listed.

ADDITIONAL DETAILS

- Eligible to relocate and available for hybrid or on-site roles.
- Latest Transcript available upon request