Ayan B M
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Professional Summary:

- Strong foundation in digital design with hands-on experience in Verilog HDL and simulation, gained through training at Mirafra Technologies.
- Skilled in FPGA programming using Vivado, and familiar with Synopsys VCS, PuTTY.
- Knowledge of C and Assembly Language.
- Proven ability to set goals, lead teams, and achieve results.
- Excellent communication, teamwork, and eager to keep learning and growing .

Skills & Tools:

Programming languages:	Verilog, System Verilog, UVM C, Python
Tools:	Xilinx Vivado, Synopsys VCS, Matlab
Concepts:	Digital Logic Design, Analog Circuit Design, Network Analysis, ASIC Design/Verification, Computer Architecture, FPGA Design

Professional Experience:

Mirafra Technologies, India | Intern **2025-Present**

- Gained hands-on experience in foundational programming skills using C .
- Gained hands-on experience in digital design using Verilog, focusing on RTL design and simulation.
- Practiced Verilog coding through PuTTY terminal and remote Linux environments.
- Worked on FPGA programming using Xilinx Vivado, including synthesis, implementation, and bitstream generation.
- Worked on System Verilog testbenches and set up a UVM based verification environment.

Emertxe Pvt Ltd, India | Intern **08/2023 – 10/2023**

- Gained hands-on experience in foundational programming skills using C and microcontrollers.
- Worked with MPLAB X IDE, PicsimLab, and the XC8 compiler for embedded system development.
- Programmed and simulated various microcontroller-based applications to enhance practical knowledge.
- Focused on debugging and optimizing code for efficient hardware-software integration.

Projects:

ALU Functional Verification Using System Verilog & UVM |System Verilog |UVM |Verilog.

- Developed an Arithmetic Logic Unit (ALU) RTL model in Verilog.
- Created System Verilog testbenches and set up a UVM-based verification environment
- Designed drivers, monitors, scoreboards, and coverage models in UVM to check ALU operations (add, sub, AND, OR, etc.).
- Performed functional verification using Synopsys VCS.

1011 Sequence Detector FSM Design and Implementation | Verilog.

- Designed and implemented Mealy and Moore sequence detector for detecting the 1011 pattern using FSM.
- Developed and verified the functionality of both overlapping and non-overlapping configurations for Mealy and Moore machines.
- Created testbenches in Verilog to verify the design through directed and random testing, ensuring correct sequence detection.
- Conducted successful simulation and verification to ensure correct functionality, focusing on edge cases and timing analysis.

Self-Balancing Robot | Arduino Nano, MPU6050 gyroscope, PID control system and L298Nmotor driver

- Built a two-wheeled self-balancing robot that maintains its balance using real-time data from the MPU6050 gyroscope.
- Programmed the PID control system to process sensor data and adjust motor speeds for stable balancing.
- Interfaced the Arduino Nano with the motor driver to control the wheels' movement based on tilt and angle measurements.
- Optimized the control system to handle disturbances and ensure smooth balancing in dynamic environments

Mini Inverter| IC CD4047

- Developed a Mini inverter that converts low-voltage DC power to standard household AC power for operating small appliances.
- Utilized IC CD4047 for generating the necessary square wave signal to drive the inverter circuit effectively.
- Designed the circuit to ensure efficient power conversion while maintaining voltage stability and minimizing output distortion.

Education:

NMAM Institute of Technology, Nitte, Karnataka **2021 – Present**

Electrical and Electronics Engineering (6th Sem)

Cumulative GPA: 7.51/10.00

Sri Adi Chunchanagiri Independent PU College, Shivmoga, Karnataka **2019-2021**

Karnataka State Pre-University Board

Percentage Scored in: 87.16 %

ACHIEVEMENTS/INTERESTS

• Consistently Showcased Projects at Departmental Tech Exhibition (Elixir) for Two Years.
• Conducted a survey on encouraging sports participation in schools, collecting data on student fitness.
• Hobbies include playing Cricket, Throwball.
• Watching documentaries and Web Series