MD. Shajedur Rahman

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Skills

Languages: C/C++, Python, Verilog

Technologies & Tools: Cadence, Matlab, Autocad, STM-32, Raspberrypi, Machine Learning, PLC, Packet Tracer, Multisim, Proteus, E-tap, T-cad.

Education

UNITED INTERNATIONAL UNIVERSITY 2021 - 2025
B.Sc. in Electrical and Electronics Engineering (EEE) ***CGPA: 3.67/4***
Relevant Coursework: Electronics, VLSI, Analog design, Calculus, Computer Networks, Digital Signal processing,Renewable Energy, Communication,Power System, Power Electronics , IPE, Microprocessor

Project Work

- **Analog Design:** Designed and analyzed various analog circuits, including two-stage Miller OTAs, current mirror OTAs, folded cascode OTA, ring oscillator, LC-VCO oscillator and also evaluating their performance characteristics.
  Tools: Cdence, Virtuoso
- **32-bit Carry Save Adder with 2-Stage Pipeline:** Designed and verified a 32-bit, 2-stage pipelined carry save adder in 45nm CMOS using Cadence Virtuoso. The design utilizes 16-bit carry select adders and passed DRC/LVS checks.
  Tools: Cadence, Virtuoso, LayoutXL
- **Line Follower Robot Without Microcontroller:** Designed and built a line follower robot featuring custom-built IR sensor modules for reliable line detection. The robot operates without a microcontroller, using differential IR reflection to guide its path.
  Tools: IR sensor, Motor Driver, Photodiode
- **Smart Car parking system:**Developed a smart car parking system using an STM32F103C8T6 microcontroller. The system features automatic gate control via IR and ultrasonic sensors, real-time slot availability displayed on an LCD, and enhanced safety with flame and gas sensors.
  Tools:STM32, Ultrasonic Sensor, IR sensor,Servo Motor
- **Network Configuration with CISCO Packet Tracer:**A network simulation was conducted, incorporating static and RIP routing protocols, static and dynamic NAT, and DHCP services to facilitate efficient data transmission and IP address management. **Tools:**Cisco Packet Tracer
- **TWO Digit object counter and Stopwatch:** Developed a two-digit (0-99) counter with selectable stopwatch and object counting modes, based on BCD up counters. In object counting mode, an IR sensor triggers the count increment.
  Tools: CD-4033, LM358, IR sensor, LM555, 7 segment display.
- **Electrical and Civil Design of a 10-Story Building Unit:** Designed the electrical and civil systems for a 3150 sq ft unit in a 10-story building, including layouts, calculations, and diagrams for power distribution, lighting, grounding, and space planning, encompassing MDB/SDB design, SB calculations, and SLD, earthing, and lightning protection setups.
  Tools: Autocad

Work Experience

United International University
Undergraduate Assistant

- Graded student assignments and laboratory experiment reports, providing feedback on technical content and adherence to guidelines.
- Ensured consistency and fairness in grading across all submissions.

Awards and Certificates

- Completed workshop on ”4IR; Readiness of Industry and Automation” with a focus on PLC programming at United International University (UIU).
- Participated in VLSI CHAMPS of EEE DAY 2024.