Doreen Sisanalli

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EDUCATION

Columbia University **New York City, NY**
Master of Science, Electrical Engineering December 2025
Fall'24 courses: Digital-VLSI, SoC-Platforms, Analog Electronic Circuits, Formal Verification of Hw Sw systems.
Spring'25 courses: Computer Architecture, Embedded Systems, Semiconductor device physics, Embedded scalable platforms.

Visvesvaraya Technological University **Hubli, India**
Bachelor of Engineering, Electronics and Communication Engineering, GPA: 3.76/4.0, Top 5%. July 2022
Served as Class Representative and Secretary for a departmental group.
Professional Body Membership: IEEE.
Relevant Coursework: VLSI Design, Embedded Systems, Analog Circuits, Digital System Design, Computer Architecture.

Awards & Honors: University Life Ambassador (Columbia), Department topper in second semester, Merit Certificate from PHEONIX, National Merit Scholarship, Gold medal in National Karate Championship.

SKILLS

Technical: C/C++, Cadence Virtuoso, DRC/LVS, FPGA, VLSI Design, Matlab, Verilog, SystemVerilog, SoC Platforms, SystemC, RISC-V, AUTOSAR, ComStack, INCA, VectorCAN, CanDiag, Debugger (UDE), V-V model.

PROJECTS

Thermal Overrun of BlitzCoin -A Fully Decentralized HW Power Management for Accelerator Rich SoC Feb. 2025 – Present
- Develop and integrate a thermally aware coin exchange mechanism into the BlitzCoin decentralized power management system for heterogeneous accelerator-rich SoCs.
- Validate the enhanced power management solution using simulation-based verification to ensure scalability and optimal performance.
- Design a dedicated hardware block that computes thermal overruns based on real-time power consumption and workload activity.
- Improve energy efficiency and prevent overheating, thereby enhancing hardware reliability and computational throughput.

VLSI Physical Design (IBM 65nm technology) – Cadence Virtuoso Oct. 2024 - Dec. 2024
- Developed and optimized an 8-bit microprocessor core from scratch with all relevant components such as SRAM, arithmetic unit, bus driver, and control logic.
- Designed schematic as well as DRC/LVS clean layout manually for the entire project.

FPGA Implementation of Classic Donkey Kong Game Nov. 2024 - Dec. 2024
- Reimagined the first level of the classic 1981 Nintendo game, Donkey Kong, on an FPGA platform. Integrated an NES controller via USB to control Mario, allowing him to navigate ramps and ladders while avoiding rolling barrels. Developed game logic in C to process inputs, which were then written to FPGA registers for hardware interpretation, enabling dynamic screen display.
- Utilized formal verification tool 'Jasper' to validate assertions.

Analog Design Project (tsmc 0.25u) Nov. 2024 – Dec. 2024
- Objective was to design an on-chip CMOS feedback amplifier that can drive an oscilloscope input, while ensuring it has a high input impedance, a fast step response (with overshoot below 1%), and a broad input-output range.

WORK EXPERIENCE

Bosch Global Software Technologies **Bangalore, India**
Software Engineer July 2022 - Nov 2023
- Orchestrated communications with Chinese OEMs to align and integrate functional requirements in CAN configuration for controllers (e.g., TBOX, TCU) to ensure seamless technical integration.
- Configured and tested UDS services ($19, $22, $2E) and built J1939 PGN request CAN frames for driver assistance module.
- Performed Unit testing and System testing in test environment such as SIL (TPT) and HWOL (Lab car).
- Involved in function development to fix resolution issue of Gear Neutral Sensor for Customer specific requirement.
- Engaged in the implementation of LinStack and DTC configuration, with strong experience in managing the complete SDLC according to ASPICE.

News Corp **Bangalore, India**
Graduate Engineer Trainee Feb 2024 - Aug 2024
- Conducted exploratory data analysis using Python (Pandas) and Tableau, and wrote queries in MySQL and PostgreSQL to derive insights from raw data and gained experience with basics of Docker for containerization and Airflow for data workflow.