Magesh K

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Career Objective

To obtain a position in the area of physical design in the latest technology nodes utilizing my skills to create integrated circuit design including but not limited to FET, cell and block-level custom layout, floor plans.

Core Competancy

- Performed block level place route and clock the design to meet timing, area and power constrains.
- Hands on experience in debugging phases of physical design development including floor planning, parasitic extraction, wire load module, static timing & clock generation.
- Hands on experience in fixing Design rule checking, fixing IR drop, LVD, LVS, fixing crosstalk, fixing congestion.
- Familiarity with Linux environment , knowledge in TCL, Shell and Perl scripting Language.
- Writing TCL scripts with proper attributes to automate design.
- Understanding the need for clock abnormalities, Physical cells, Tie cells, Spare cells, DFT, Clock gating cells and scan chain reordering in the design.
- Implementing STA concept to corelate with app options to constrain the design.
- Good command on EDA & APR tools like Primetime,ICC2.
- Self motivated, high learning competency and ability to work in diverse area in a flexible and dynamic environment.

Education Details

Advanced Diploma in ASIC Design   **2023**
RV-VLSI Design Center
Bachelor Degree in **Electronics and Communication**   **2022**
Presidency University, with 6.87 CGPA
                                                                                                                          2017
Seshardripuram IND PU College , with 56.66 %
SSLC   **2015**
Siddhartha High School, with 80 %

Domain Specific Project

RV-VLSI and Embedded Systems Design Center

Graduate Trainee Engineer   Aug-2022 to Feb-2023

Design of SoC block using 40nm technology

Description

Designed a block-level-IC with maximum operating frequency of 833MHz at 1.1V power supply in 40nm technology, consisting of 34 macro cells, 38921 Std cells, used CCD flow to achieve accurate timing in the clock and data paths with power budget 600mW.

Tools

Software tools used Primetime and ICC2 from Synopsys. Linux an open source operating system (OS).

Challenges

- Placing the macro cells manually in according to the data flow between the blocks to achieve high core utilization and to maximize the area available to place standard cells
- Getting the IR drop within the target with no DRC and LVS violation was quite a challenges and great learning at the same time.
- Analyzing multiple timing report and log file after each iteration to compare the previous iteration report with the present iteration report.
- Running multiple iteration by adjusting the gap between the macro cells according to the calculation with overflow value to reduce the congestion.

RV-VLSI and Embedded Systems Design Center

Graduate Trainee Engineer   Aug-2022 to Feb-2023

STATIC TIME ANALYSIS

Description

Analysis of timing for Latch and flip-flops having dissimilar timing paths working in a various operating conditions while taking in PVT conditions OCV, AOCV, CRPR and uncertainty while constraining them.

Tools

PrimeTime from Synopsys. Linux an open source operating system (OS).

Challenges

- Good understanding of setup and hold slack information of the timing paths to study launch path and capture path.
- Studying the timing report for various timing paths that are having latches and flipflop.
- understanding the dissimilarities between Path based analysis (PBA) and Graph based analysis (GBA).
- Validating the timing performance of the design by checking all possible paths for timing violations.

B.E / B.Tech Academic Project

Presidency University

VEHICLE TO VEHICLE COMMUNICATION USING LIGHT FIDELITY

Description

Intelligent Transport System(ITS) are advanced applications that are used to provide various innovative services to facilitate road safety and traffic management, Vehicular communication using Li-Fi is an advance technology that can be used in ITS.

Tools

Software's used Arduino IDE and Embedded C. Hardware's used Arduino board, Light Fidelity Receiver, Light Fidelity Transmitter, Light-emitting diode, photodiode, 2*16 LCD, APR9600 experimental board, 1*4 Switch Keypad and 12V Power Supply

Challenges

- For Li-Fi based communication to happen between two vehicle module, both the vehicle's module Li-Fi Rx and Li-Fi Tx should be in line-of-sight but it was very difficult to set both module in line-of-sight each time the project was demonstrated.

B.E / B.Tech Academic Project

Presidency University

VEHICLE TO VEHICLE COMMUNICATION USING LIGHT FIDELITY