Setting Standards in VLSI Design
Maven Silicon

Evolved in VLSI Technologies, Maven Silicon is a VLSI Training company that offers wide range of corporate and professional training services. Maven Silicon is the only training company in India that offers SystemVerilog and UVM based advanced verification courses and holds the credit of training 500+ engineers per year.

With shrinking process technologies, ever growing design sizes and increasing integration of IP to a single chip, verification has become extremely complex and critical part of any SoC design today. As the chip verification consumes 60% of the design cycle, most of the VLSI companies hire fresh VLSI engineers who have extensively been trained on ASIC verification methodologies and technologies and dedicate them only for chip verification. Usually 70% of the engineers in any product or services company dedicated only on functional verification and the remaining 30% of the engineers work on RTL design, STA and Analog etc. So there are plenty of job opportunities for fresh VLSI engineers who are highly skilled in ASIC verification. We at Maven Silicon have designed the courses keeping this fact in our mind. You can depend on our expertise and world class training infrastructure to learn the VLSI technologies and get a job in the top semiconductor industry.

Our CEO, Sivakumar P R has 20+ years of experience in engineering and semiconductor industries. He has worked as a Verification Consultant in the top EDA companies, Synopsys, Cadence and Mentor Graphics. During this tenure, he worked very closely with various ASIC and FPGA design houses and helped them to use the EDA solutions effectively, for the successful tape-outs of multi million gate designs.

To know more about our CEO, please visit http://www.linkedin.com/in/sivapr

FIVE REASONS TO MUSE ON MAVEN SILICON INCLUDES,

1. SystemVerilog and UVM based Advanced Verification

Maven Silicon as the training centre edifies engineers on the advanced ASIC Verification methodologies and SystemVerilog. In addition to these advanced technologies, we also impart the basic VLSI technologies like Advanced Digital Design Methodology, Advanced Verilog, STA & CMOS fundamentals.

2. Course Delivered by Industry Experts

As courses such as VLSI-VM are composed of advanced VLSI design and verification technologies, only experienced VLSI engineers can deliver it. At Maven Silicon, industry experts share their experience and guide you on how to enhance your skills in VLSI Industries.

3. Superior Training Methodology

At Maven Silicon, the experienced engineers who work in the top semiconductor industries share their experience with you and demonstrate how the concepts are applied in the real environment. Only 30% of VLSI-VM course is dedicated to impart concepts and remaining 70% for labs, mini projects and final project.

4. Excellent Placement Assistance

Our CEO, Sivakumar is the Founder and CEO of a VLSI design services company called Aceic Design Technologies. We recruit the top performers of Maven Silicon for our services company and provide them great opportunities to work on complex verification projects, with industry best salary package. To know more about our services company, please visit www.aceic.com

We work closely with various VLSI product and services companies and identify the right opportunities for the students who successfully complete our training program. Most of the students have been successfully placed in renowned semiconductor companies.

5. Excellent work environment

We provide excellent work environment, which has adequate hardware and software infrastructure. Maven Silicon has chosen Mentor Graphics as its EDA partner and provides great opportunities to engineers to work on verification platform like Questa and explore the advanced ASIC verification technologies and methodologies.

EDA Partner - Mentor Graphics

Mentor Graphics is leader in Electronic Design Automation. Its innovative products and solutions help engineers conquer design challenges in seemingly daunting world of board and chip design.

To know more about Mentor Graphics, please visit www.mentor.com

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ADVANCED ASIC VERIFICATION COURSE

MODULE 1
Advanced Digital
* Combinational Circuits - Design and Analysis
* Sequential Circuits - Design and Analysis
* Shift Registers and Counters
* Finite State Machine

MODULE 2
Introduction to Linux
* Components of UNIX system
* Directory Structure
* Utilities and Commands
* Vi Editor

MODULE 3
Static Timing Analysis
* Introduction to STA
* Comparison with DTA
* Timing Path and Constraints
* Different types clocks
* Clock domain and Variations
* Clock Distribution Networks
* How to fix timing failure

MODULE 4
Advanced Verilog for verification
* Tasks and Functions
* Delays - Regular, Intra Assignment
* and Intertial Delays
* Race Conditions
* File I/O operation
* TB Constructs
* Self checking Testbenches

MODULE 5
Code Coverage
* Statement coverage
* Branch Coverage
* Expression Coverage
* Path Coverage
* Toggle Coverage
* FSM - State, Arc and Sequence coverage

MODULE 6
ASIC Verification Methodologies
* Directed Vs Random
* Functional verification process
* Stimulus Generation
* Bus function model
* Monitors and reference models
* Coverage Driven Verification
* Verification Planning and management

MODULE 7
[1] Introduction to System Verilog
* New Data types
* Tasks and Functions
* Interfaces
* Clocking Blocks
* OOP Basics
* Classes - Objects and handles
* Polymorphism and Inheritance
* Randomization
* Constraints
[3] Threads and Virtual Interfaces
* Fork Join
* Fork Join_any
* Fork Join_none
* Event controls
* Mailboxes and semaphores
* Virtual Interfaces
* Transactors
* Building verification environment
* Test cases
* Facade Class
* Building Reusable Transactors
* Inserting Callbacks
* Registering Callbacks
[5] Direct Programming Interface
* Coverage models
* Coverpoints and bins
* Cross coverage
* Regression testing

MODULE 8
Advanced System Verilog
* Environment Configuration
* Reference Models and Predictor Logics
* Using Legacy BFM
* Scenario Generation
* Testcases - Random, Directed and Corner Case
* Coding styles for VIP

MODULE 9
Verification Planning and Management
* Verification Plan
* TB Architecture
* Coverage Model
* Tracking the simulation process
* Building regression test suite
* Testsuite optimization

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MODULE 10
Assertion Based Verification - SVA

- Introduction to ABV
- Immediate Assertions
- Simple Assertions
- Sequences
- Sequence Composition
- Advanced SVA Features
- Assertion Coverage

MODULE 11
UVM-Universal verification Methodology

- Introduction to UVM Methodology
- Overview of Project
- UVM TB Architecture
- Stimulus Modeling
- Creating UVCs and Environment
- UVM Simulation Phases
- Testcase Classes
- TLM Overview
- Configuration TB Environment
- UVM Sequences
- UVM Sequencers
- Connecting DUT - Virtual Interface
- Virtual Sequences and Sequencers
- Creating TB Infrastructure
- Connecting multiple UVCs
- Building a Scoreboard
- Introduction to Register Modeling
- Building reusable environments

MODULE 12
Design Automation using Scripts Perl

- Introduction to Perl
- Functions and Statements
- Numbers, Strings, and Quotes
- Comments and Loops

Elective Modules

- LP - Low Power VLSI Design
- DFT - Design for Test
- AMS - Analog Mixed Signal

MODULE 13
Pilot project - Verification and RTL Sign-off

- Project Specification Analysis
- Understanding the architecture
- Module level implementation and verification
- Building the top level module

MODULE 14
Industry Standard Project

- Project specification analysis
- Defining verification plan
- Creating Testbench architecture
- Defining Transaction
- Implementing the transactors - Generator, Driver, Receiver and Scoreboard
- Implementing the coverage model
- Building the top level verification environment
- Defining weighted random, corner case and directed
- Building the functional and code coverage reports

MODULE 15
Business communication

- Transition from College to Corporate
- Interpersonal skills and Presentation Skills
- Email Etiquette
- Resume writing
- Interview Skills: Group Discussion and HR Round Preparation
- Mockup Interviews Technical/HR

EDA TOOLS

- Mentor Graphics
- Xilinx
- Aldec

OPERATING SYSTEMS

- Linux - Ubuntu

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