



ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

(Unit of Alva's Education Foundation (R), Moodbidri)

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

VLSI CLUB REPORT - 2023-24

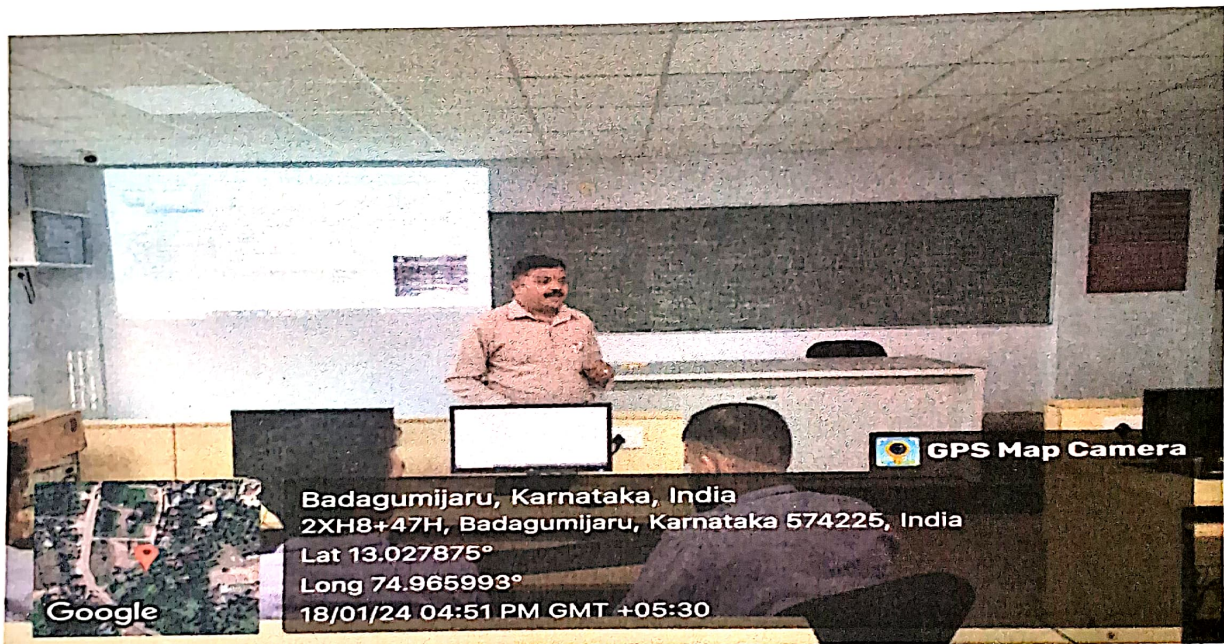
The workshop Report on Verilog HDL

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Date: 23-01-2024

Introduction:

A Four-day workshop on Verilog HDL coding was organized by Dr. D V Manjunatha, Professor by Department of Electronics and Communication Engineering (ECE) and VLSI Club Coordinator at Alvas Institute of Engineering and Technology to the 3rd A/ Section Students scheduled on 17th to 18th of January, 2024 and 22nd to 23rd January, 2024. The program was aimed to provide participants with comprehensive knowledge and hands-on experience in Verilog coding in VLSI Design, covering both theoretical concepts and practical applications.



Objectives:

- ❖ To impart fundamental knowledge of Verilog Coding design principles.
- ❖ To introduce participants to various tools and methodologies used in Verilog Design.
- ❖ To provide hands-on experience through practical sessions.
- ❖ To enhance participants' understanding of current trends and advancements in Verilog design.

Agenda:

Day 1: Introduction to Verilog coding

Overview of Verilog Technology

Basic Building Blocks: Gates, Flip-Flops,

Introduction to HDL (Hardware Description Language)

Introduction to CAD Tools for Verilog Design Tools such as Xilinx, Vivado etc.,

Day 2: Advanced VLSI Design

Combinational and Sequential Circuit Design

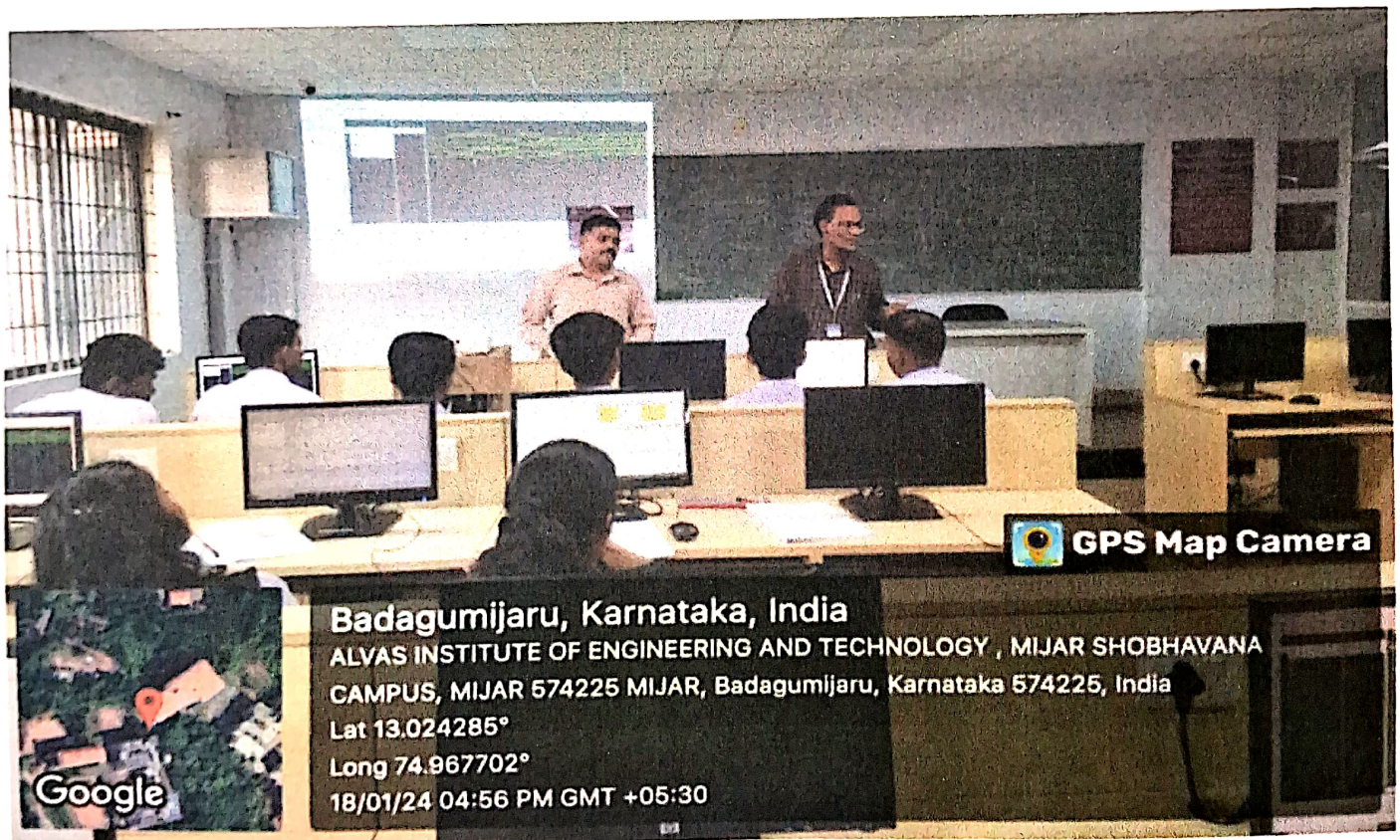
Introduction to FPGA (Field-Programmable Gate Array) Design
Hands-on Session: Designing Basic Circuits using CAD Tools
Day 3: Digital System Design with Xilinx EDA Tool, Register Transfer Level (RTL) Design Synthesis and Optimization Techniques, Timing Analysis.
Day 4: Emerging Trends and Future Directions, Introduction to System-on-Chip (SoC) Design, Low Power Design Techniques, Overview of VLSI Testing, Industry perspective: Challenges and Opportunities

Participants:

The work shop was conducted to all 3rd sem B/ Section Students to give the insight into the digital Design. The participants showed keen interest and active engagement throughout the sessions.

Outcome:

The workshop provided to be highly beneficial, achieving its objectives effectively. Participants gained a solid understanding of Verilog HDL coding principles, learned to use various CAD tools, and acquired practical skills through hands-on sessions. The interactive nature of the program encouraged active participation and knowledge sharing among participants.



Conclusion:

The Four-day workshop on Verilog HDL Dr. D V Manjunatha. Sr. Professor was a resounding success, providing participants with a comprehensive understanding of both HDL and VLSI design concepts and practical skills. Such initiatives play a crucial role in bridging

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Report on Invited Talk by Jaseem Ahmed, Staff Analog and Mixed Signal VLSI Design Engineer at Qualcomm, San Digo

Title: Invited Talk on "VLSI - The Present and Future" Conducted by VLSI Club, in Association with Anmaya- The VLSI Startup

Date: 02-03-2024, **Venue:** VLSI Lab, **Speaker:** Mr. Jaseem Ahmed

Organizer: Dr. D.V. Manjunatha, Sr. Professor & VLSI Club Coordinator

Introduction:

The invited talk on "VLSI - The Present and Future" commenced as scheduled at 11.00 AM at VLSI Lab. Talk was conducted for Final Year Students (68 Students and 03 Faculty were present. The event saw a significant turnout from both industry professionals and academic scholars eager to delve into the advancements and prospects within the field of Very Large Scale Integration (VLSI).



Keynote Address:

Mr. Jaseem Ahmed

, a distinguished figure in the domain of VLSI, took the stage to deliver his insights into the present landscape and the anticipated future developments within the realm of semiconductor technology.

Overview of VLSI:

Mr. Ahmed began by providing an overview of VLSI, emphasizing its pivotal role in modern electronics. He elucidated on the intricate processes involved in designing and fabricating integrated circuits, underscoring the relentless pursuit of miniaturization and efficiency in contemporary semiconductor manufacturing.

Current Trends:

Highlighting the current trends in VLSI, Mr. Ahmed elaborated on the paradigm shifts brought forth by emerging technologies such as Artificial Intelligence (AI), Internet of Things (IoT), and 5G networks. He underscored the symbiotic relationship between VLSI and these transformative technologies, illustrating how advancements in one domain catalyze innovations in the other.

Challenges and Opportunities:

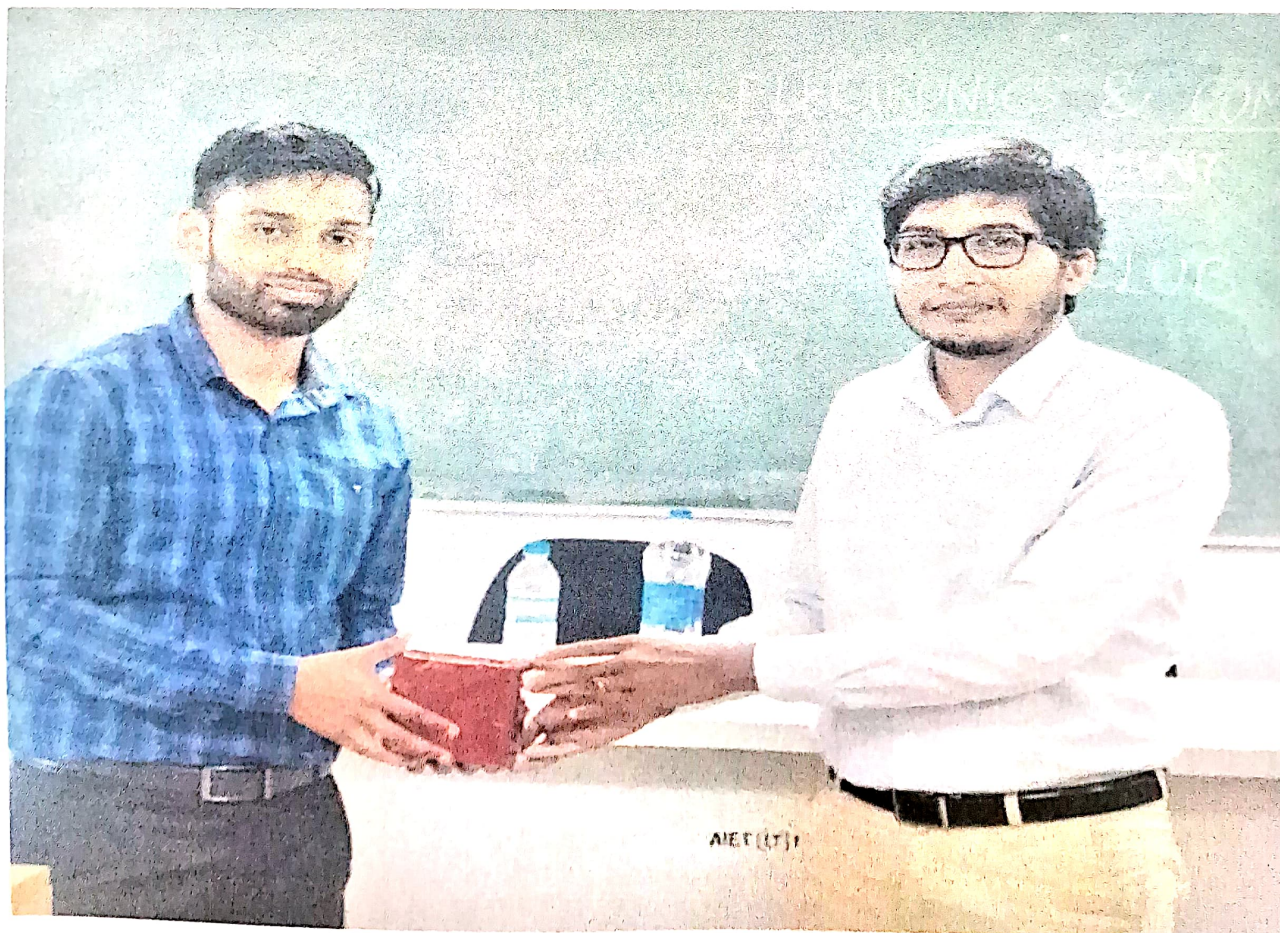
Addressing the challenges encountered in VLSI design and fabrication, Mr. Ahmed elucidated on issues pertaining to power consumption, heat dissipation, and design complexity. However, he also emphasized the plethora of opportunities presented by these challenges, advocating for interdisciplinary collaborations and novel design methodologies to surmount existing barriers.

Future Prospects:

In anticipation of the future trajectory of VLSI, Mr. Ahmed delved into the prospects of quantum computing, neuromorphic engineering, and beyond. He articulated a vision of VLSI evolving beyond conventional silicon-based technologies, envisaging a future where innovation transcends the constraints of classical computing paradigms.

Interactive Session:

The session concluded with an interactive segment wherein attendees engaged in a vibrant exchange of ideas with Mr. Ahmed. Participants posed thought-provoking questions, seeking elucidation on diverse topics ranging from emerging fabrication techniques to the societal implications of ubiquitous semiconductor integration.



Closing Remarks:

In his closing remarks, Mr. Ahmed expressed his gratitude to the organizers and attendees for their active participation and enthusiasm. He reiterated the importance of continuous learning and collaboration in steering VLSI towards a future defined by innovation and ingenuity.

The invited talk on "VLSI - The Present and Future" concluded on a high note, leaving attendees inspired and enlightened about the dynamic landscape of semiconductor technology. The event served as a testament to the enduring significance of VLSI in shaping the technological advancements of tomorrow.

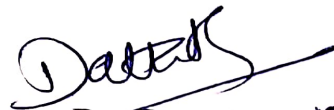


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