

# NEXUS

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DEPARTMENT OF ECE



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Education is not an act of acquiring knowledge but learning a skill to lead life and forming one's personality. This is an ennobling process of growth. I can boldly say that we have excelled in every initiative that we undertook and we have stood together in facing the challenges in realizing quality education. Our department has been actively involved in various activities that have brought to light the hidden talents of our students and faculty. I am happy to note that our department is coming out with another new edition of our Newsletter "NEXUS". The Newsletter is presenting a glimpse of the growth of the Department on many fronts. I congratulate the department for their commitment towards the provision of excellent all-round education for our students. I also wish them to move forward with confidence, pride and enthusiasm. As Sir Henry Royce said "Strive for perfection in everything you do. Take the best that exists and make it better. When it does not exist, design it."

**Prof. Dr. Anto Sahaya Dhas**  
HEAD OF DEPARTMENT  
Electronics And Communication Engineering  
Vimal Jyothi Engineering College, Chempuri



## VISION

To be a pacesetter in the field of Electronics and Communication Engineering.

## MISSION

To provide quality education for the students in the field of Electronics & Communication Engineering. To educate student about professional and ethical responsibilities and train them to build life skills for their career development.

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## AI-Enabled Optimization Techniques in VLSI Design

**Design** The world of Very Large-Scale Integration (VLSI) design is undergoing a paradigm shift, fueled by the relentless demand for faster, more powerful, and energy-efficient electronic devices. As the complexity of integrated circuits continues to surge, traditional design methodologies are facing unprecedented challenges in meeting these evolving demands. In this dynamic landscape, Artificial Intelligence (AI) has emerged as a disruptive force, transforming various industries, and notably, revolutionizing VLSI design. AI has gained prominence in VLSI design due to its remarkable capabilities in handling complex tasks, processing vast amounts of data, and making intelligent decisions. With its advent, the integration of AI-Enabled Optimization Techniques has ushered in a new era, unlocking novel possibilities and transforming chip innovation.

**AI in VLSI Design** Artificial intelligence (AI) has become a disruptive factor in many industries in recent years, and VLSI design is no exception. The semiconductor business has undergone a revolutionary transition as a result of the integration of AI in VLSI design, taking it into uncharted waters. Machine learning algorithms lie at the heart of AI-driven VLSI design. These algorithms have the ability to analyse large datasets, identify patterns, and learn from previous design experiences. Designers can leverage machine learning techniques to gain valuable insights into chip architectures, optimize performance, and discover novel solutions to design challenges.

In the design of VLSI, deep neural networks have demonstrated to be incredibly promising. They can be used for things like layout generation, optimization, and physical design verification. The effectiveness and accuracy of different design processes have been greatly enhanced by these networks; capacity to analyse subtle patterns and process large amounts of data. AI brings with it a plethora of advanced optimization techniques that outperform traditional methods. From genetic algorithms to particle swarm optimization, AI-enabled optimization techniques efficiently explore the vast design space, leading to superior chip architectures with enhanced performance and reduced power consumption. The time and effort needed for VLSI design have been significantly decreased thanks to automation powered by AI. Automation makes it possible to complete tasks that traditionally required a lot of manual labour, resulting in shorter time-to-market for new goods and quicker design cycles. As regular design activities are replaced by AI, designers can concentrate more on innovation and creativity. With billions of transistors crammed onto a single chip, modern VLSI designs are incredibly complicated. AI excels at handling such complicated designs, providing effective answers to challenges that traditional approaches find difficult to address. Neural networks have the ability to spot potential design stumbling blocks, anticipate performance problems, and improve semiconductor layouts, resulting in more reliable design.



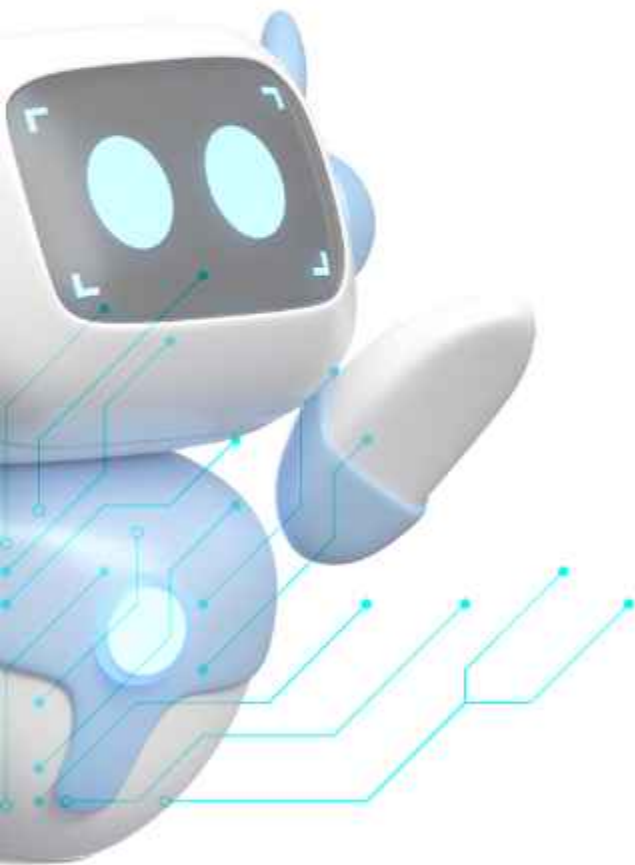


AI-enabled optimization techniques have become crucial to VLSI design as the need for more sophisticated electrical devices rises. AI's impact on chip development is revolutionary, with benefits ranging from performance improvements to energy efficiency. Designers can overcome design obstacles, speed up the development process, and produce high-performance, energy-efficient chips that will power the future of technology by utilizing the power of AI. As AI develops, it will definitely open up more opportunities, fostering innovation and launching the semiconductor sector into uncharted waters. A new era of chip innovation will be shaped by the convergence of AI and VLSI design, with consequences for many different technological fields as well as society at large.



**SANATH S**

**Physical design Engineer I -  
Incise Infotech Pvt Ltd,  
BANGLORE**





## India's Independence through the eyes of Literature

India's independence in 1947 marked a profound shift in its literary narrative, intertwining the nation's political journey with its cultural and intellectual expression. The struggle for independence found early expression in the works of Bengali writers like Bankim Chandra Chattopadhyay, whose "Anandamath" became a source of inspiration with its patriotic hymn "Vande Mataram." Rabindranath Tagore's writings, particularly "Ghare-Baire," delved into the conflicts of nationalism, tradition, and modernity, reflecting the intellectual awakening that was gripping the country.

As the freedom movement gained momentum, literature became a potent tool for social critique and resistance. The Progressive Writers' Movement, spearheaded by figures like Mulk Raj Anand, Ismat Chughtai, and Premchand, emphasized the struggles of the marginalized, challenging the status quo and envisioning a society free from oppression. Premchand's novels and stories, like "Karmabhoomi," portrayed the social tensions and aspirations of a nation on the brink of change.

During the partition, literature became a witness to the trauma and tragedy of a divided land. Saadat Hasan Manto's stark and poignant stories, like "Toba Tek Singh," captured the absurdity and horror of the partition. His works are a testament to the human cost of political decisions, portraying the deep scars left on the collective consciousness of the subcontinent. Khushwant Singh's "Train to Pakistan" similarly depicted the chaos and violence of partition, highlighting the human suffering that accompanied independence. Post-independence literature grappled with the realities of a newly sovereign nation. Writers like R.K. Narayan, with his portrayal of life in the fictional town of Malgudi, captured the everyday challenges and triumphs of ordinary Indians in a rapidly changing society.

Salman Rushdie's "Midnight's Children," a seminal work in postcolonial literature, intertwined the personal with the political, using magical realism to narrate the story of India's transition from British rule to independence.

In regional literature, authors continued to explore the themes of independence and its aftermath. Mahasweta Devi's works in Bengali, such as "Hajar Churashir Maa," critically examined the continuing struggles of marginalized communities, questioning the meaning of freedom in a society still riddled with inequality. In Tamil literature, Jayakanthan's works provided a nuanced look at the social and political changes in post-independence India, addressing issues like caste and social reform.

Contemporary Indian literature continues to reflect on independence, often reassessing the past through a modern lens. Writers like Arundhati Roy, with "The God of Small Things," have explored the lasting impacts of historical events on personal lives, examining how the legacies of colonialism and partition continue to shape the present. Amitav Ghosh's novels, such as "The Shadow Lines," blur the boundaries between history and fiction, reflecting on the interconnectedness of personal and national histories.



**Jibin Varghese**  
**S7 ECE**



## INTERNATIONAL SEMINAR

An International Seminar titled “Enhancing Lives: Inclusion, Higher Education, and Employment for Neurodivergent Individuals” was held on July 30, 2024, at Vimal Jyothi Engineering College. The event was organized in collaboration with the Ruth S. Ammon College of Education and Health Sciences, USA, and the CRC Kozhikode.





## FAREWELL

The journey we have travelled together has been filled with laughter, challenges, and moments of growth. Your support, kindness, and camaraderie have made all the difference. Though our paths may diverge, please know that the bonds we have forged will always remain close to our heart.

All the best dear Lakshmi Miss







## FDP ATTENDED

- Ms. Grace John has participated in FDP on AI @ Energy Efficiency organized by department of EEE ,Vimal Jyothi Engineering College.
- Ms. Anusha Chacko has participated in FDP on AI @ Energy Efficiency organized by department of EEE ,Vimal Jyothi Engineering College.
- Ms. Sudharshana Vijayan has participated in FDP on AI @ Energy Efficiency organized by department of EEE ,Vimal Jyothi Engineering College.
- Ms. Ann Mathews has participated in FDP on AI @ Energy Efficiency organized by department of EEE ,Vimal Jyothi Engineering College.
- Mr. Binil Kumar has participated in FDP on AI @ Energy Efficiency organized by department of EEE ,Vimal Jyothi Engineering College.





## VIMAL JYOTHI ENGINEERING COLLEGE DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING S6 ECE TOPPERS (2021-25 BATCH)



ANGEL MARY  
8.43



MARTIN REJU  
8.65



8.59



SEBASTIAN JOSEPH  
8.43

*Congratulations*



## Department of Electronics & Communication Engineering 2023-27 BATCH

### S2 UNIVERSITY EXAMINATION TOPPERS



Devadath C  
SGPA 9.52



Aneeta Ullas  
SGPA 9.38



Theresa Binny  
SGPA 8.93

*Congratulations...*



VIMAL JYOTHI ENGINEERING COLLEGE,  
CHEMPERI

Electronics and Communication  
Engineering  
**Congratulations**

**S4 Toppers**



PRIYAL ROSE  
9.68



PREETH MARIYA  
9.5



SURYA JACKSON  
9.09

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*Congratulations*





September

## PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

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1. **Graduates will have successful career in the field of Electronics and Communication Engineering and allied sectors**
2. **Graduates will have the ability to pursue higher studies and research**
3. **Graduates will demonstrate entrepreneurial skills to develop innovative products and services**
4. **Graduates will adapt to different roles in global working environment by respecting diversity and professional ethics**

## EDITORIAL BOARD

**Mrs.Shimna PK**  
(Assistant Professor ,ECE)

**Mr.Binil Kumar**  
(Assistant Professor ,ECE)

**Student Editor : Martin Reju**  
S7 , ECE

