Kalpataru Vidya Samste®

Kalpataru Institute of Technology

The Byte

Dream. Design. Deliver: The ECE Way

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

2022-23

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ABOUT THE INSTITUTION

Kalpataru Institute of Technology was established in 1986 with a view to provide quality technical education. The college is affiliated to Visvesvaraya Technological University, Belagavi, approved by All India Council for Technical Education (AICTE), New Delhi.

INSTITUTE VISION

To bring forth Technical Graduate of high caliber with a strong character and to uphold the spiritual and cultural values of our country

INSTITUTE MISSION

To impart quality technical and managerial education at Graduate and Post Graduate levels through our dedicated and well qualified faculty members.

GUIDING VISIONARIES

President

Sri. P.K.Thipperudrappa

Treasurer

Sri. T S Shivaprasad

Vice Presidents

Sri. T.S Basavaraju

Sri.Bagepalli Nataraj

Sri. G.P.Deepak

Sri. B.S.Umesh

Secretaries

Sri. M.R.Sangamesh

Sri. Sudhakar.H.G

Sri. G.S.Umashankar

Sri. T.U.Jagadeeshmurthy

GUARDIAN OF ACADEMIC INTEGRITY

Principal

Dr. G.D. Gurumurthy

PIONEER OF DISCIPLINE EXCELLENCE

Head of the Department

Prof. G.S.Yogananda

THE VOICE BEHIND THE PAGES

Editorial Curator

Prof. PradeepKumar S K

ABOUT THE DEPARTMENT

Department of Electronics and Communication Engineering was established in the year 1986 with an intake of 60 students for Bachelor of Engineering (BE) programme and affiliated to Bangalore University. Subsequently the department of Electronics and Communication Engineering of Kalpataru Institute of Technology was affiliated to Visvesvaraya Technological University during the year 1998.

Currently the department is offering Bachelor of Engineering with an intake of 120 students in Under Graduate (UG) programme. The Department also has a Research Center where the Research Scholars can do Research & pursue Ph.D Degree.

VISION

To contribute towards the development of technology in the field of Electronics and Communication so that mankind can have more benefits from our works and thoughts.

MISSION

M1: To provide excellent education in the field of Electronics and communication technologies

M2: To promote scientific and research attitudes to bring out the best from our students to make them excellent engineers.

MESSAGE FROM THE HOD

On behalf of the Electronics and Communication Department, Kalpataru Institute of Technology, I am pleased to announce the launching of the 2022-23 edition of the **"The Byte"** Magazine of the Electronics and Communication Department and to make it available to everyone. This Technical Magazine aims to disseminate achievements from our students and faculties in research and developments.

As HOD, I am open to exploring the opportunities for making this Technical Magazine an exciting and definitive forum for attracting and publishing high-impact research contributions that are innovative and transformative, and for making this technical magazine serve as a forum for disseminating timely and exciting ongoing research that can stimulate innovation.

The entire Editorial team has worked diligently to create a platform for esteemed faculty members, researchers and students to disseminate their latest achievements. Through this, we aim to share the knowledge gained from their technical pursuits with fellow researchers, faculty, industry experts, and students.

OUR DEDICATED EDUCATORS

FACULTY PROFILES

Sl.No	Name	Designation	Area of Specialization
1	Dr. S V Rajashekarardhya	Professor	Image Processing
2	Mr. G S Yogananda	Associate Professor	Image Processing
3	Dr. Gurumurthy G D	Professor	Wireless Communication
4	Mr. Channabasayya Mathad	Associate Professor	Wireless Communication
5	Mr. Prashanth N R	Associate Professor	VLSI Design & Embedded System
6	Dr. Hadimani Shivakumar	Associate Professor	Nano Dielectrics
7	Mr. Rudresh M D	Associate Professor	Signal Processing
8	Mr. Niranjana Swamy G S	Associate Professor	Power Electronics
9	Mrs. Prathibha C	Assistant Professor	Computer Science
10	Mr. Anand U Hiremath	Assistant Professor	DE&CS
11	Mr. Pradeepkumar S K	Assistant Professor	VLSI Design & Embedded System
12	Dr. Lohith M S	Associate Professor	Signal processing
13	Mr. Sunil Kumar K M	Assistant Professor	DE&CS
14	Mrs. Smitha M M	Assistant Professor	Electronics
15	Mr. Nandeesh G S	Assistant Professor	DE&CS
16	Mrs. Chethana H S	Assistant Professor	VLSI Design & Embedded System
17	Mr. Sundaresh M P	Assistant Professor	Image Processing
18	Mrs. Nandini S	Assistant Professor	DE&CS

CONNECTING THEORY TO REALITY: INDUSTRIAL EXPLORATION

Industrial Visit to Linganamakki Dam and Powerhouse: A Learning Experience

A group of enthusiastic college students from 6th semester recently on 3rd June 2023 embarked on an industrial visit to the renowned **Linganamakki Dam and Powerhouse** in Karnataka. This site, a marvel of engineering and a critical contributor to the state's hydroelectric energy supply, offered students an insightful experience into the intricate workings of renewable energy production.

The tour began with an introduction to the dam's structure and its massive capacity to harness the flow of the Sharavathi River. Students were captivated by the scale of operations and the critical role the dam plays in irrigation and water storage.

At the powerhouse, the group had the opportunity to witness the hydroelectric generation process firsthand. Experts explained the mechanism of turbines, generators, and transformers, emphasizing how water is converted into clean energy. It was an excellent way for students to connect classroom theories with real-world applications.

This visit provided not only technical knowledge but also fostered environmental awareness, as the students learned about the significance of sustainable energy practices. The experience left them inspired and motivated to explore careers in engineering and environmental sciences.

The dam area is also a tourist place. Approach to this dam is very easy and frequent. Sagara division is well connected with other nearby cities through state highways and better link roads. Boating facilities and water scooting (recently started) have also been made available there. Surrounding area of this dam is also having some lush and dense forestry. A park fitted with large amenities and swings is also located at this dam. A small number of migratory birds are seen here in the monsoon season. Typical crocodiles are also found in the lower area of this dam and tourist can see the crocs taking sunbath.

The trip was both educational and memorable, leaving everyone with a deeper appreciation for the advancements in energy generation and their impact on society.

Guest Lecture on "Through the Cosmos: Remembering Kalpana Chawla's Legacy" on 13th April 2023 by BP Dakshayani, ISRO

A Glimpse into Our Distinguished Guest's Journey

BP Dakshayani, a respected professional, former group director of the Flight Dynamics and Space Navigation groups of the Indian Space Research Organisation Satellite Centre, is known for her expertise in space technology and engineering. With a wealth of experience, she has contributed to various pivotal projects at ISRO, including advancements in satellite technology, space missions, and research initiatives. Her work reflects a strong commitment to innovation and the advancement of India's space exploration efforts.

On 13th April 2023, BP Dakshayani, a distinguished expert from ISRO, delivered an inspiring guest lecture titled *"Through the Cosmos: Remembering Kalpana Chawla's Legacy."* The event celebrated the remarkable journey of Kalpana Chawla, the first woman of Indian origin in space, while exploring her enduring impact on the world of aerospace and science. Dakshayani highlighted Chawla's achievements, her groundbreaking space missions, and her legacy as a beacon of inspiration for aspiring engineers and scientists.

Beyond commemorating Kalpana Chawla, the session delved into fascinating topics such as India's pioneering space missions and the critical role of satellites in communication, navigation, and Earth observation. Dakshayani shared insights into ISRO's advancements, emphasizing how innovation in satellite technology has transformed industries and daily lives.

With vivid examples and relatable analogies, the talk inspired students to dream beyond boundaries, embrace challenges, and contribute to India's dynamic space exploration endeavors.

BP Dakshayani has provided invaluable insights into the success of India's iconic **Mars Orbiter Mission (MOM)**, also known as **Mangalyaan**. The mission, launched on 5th November 2013, marked India's first interplanetary venture, achieving orbit around Mars on 24th September 2014—a feat accomplished on the first attempt and within a remarkably cost-effective budget.

Drawing on her expertise, Dakshayani highlighted the pivotal role of precise **flight dynamics** and **trajectory planning** in ensuring the spacecraft's 650-million-kilometer journey to Mars. The mission utilized innovative energy-efficient maneuvers, including Earth-bound orbit raising, the Trans-Mars Injection (TMI), and accurate navigation to maintain course.

The lecture concluded with a motivational message encouraging the audience to channel their curiosity and passion toward shaping the future of space technology. This guest lecture served as a testament to the spirit of exploration and innovation, leaving a lasting impression on the engineering students. Let me know if you'd like to refine this further!

EMPOWERING INNOVATION: AN ALUMNUS' PERSPECTIVE ON AI AND ML

A technical talk on "Artificial Intelligence and Machine learning"on 9th April 2023 by Alumnus Mr.Yogasuhas K M

Our students were treated to an enlightening session on **Artificial Intelligence (AI) and Machine Learning (ML)** by an esteemed alumnus, **Yogasuhas K M**, Research Scholar, Ryerson University, Toronto, Canada who is now a leading expert in the field. The talk delved into the transformative potential of AI and ML, showcasing their growing influence across industries such as healthcare, finance, and automation.

The alumnus skillfully bridged theoretical concepts with practical applications, providing insights into how AI and ML are solving real-world challenges.

Topics included the basics of neural networks, predictive modeling, and data analytics, along with an overview of emerging trends like deep learning and natural language processing.

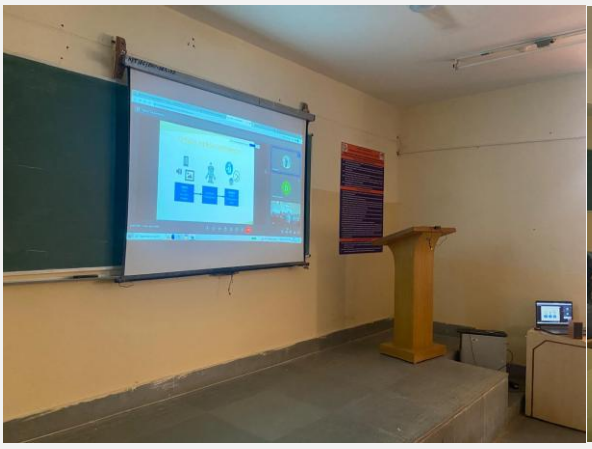
A special emphasis was placed on the importance of interdisciplinary learning and keeping pace with technological advancements. The speaker also shared personal experiences and career advice, inspiring students to explore the vast opportunities in this dynamic field.

The session concluded with an interactive Q&A, where students eagerly posed questions about career paths, project ideas, and the future of AI. This enriching talk left the audience motivated and equipped with valuable knowledge to venture into the world of AI and ML.

DRIVING INNOVATION: INSIGHTS FROM AN INDUSTRY EXPERT

A technical talk on “How Linear Algebra concepts are used in Artificial Intelligence and Machine learning” on 6th March 2023 by Dr. Dinesh from Samsung India Electronics Ltd

On 6th March 2023, Dr. Dinesh, Principal Engineer, a distinguished expert from Samsung India Electronics Ltd., conducted an impactful online session on **"How Linear Algebra Concepts are Used in Artificial Intelligence and Machine Learning."** This virtual talk provided engineering students with a detailed understanding of how linear algebra serves as the mathematical backbone for AI and ML technologies.



Dr. Dinesh began by breaking down the principles of matrices, vectors, and transformations, explaining their critical role in constructing and operating machine learning models and neural networks. The discussion featured examples of linear algebra applications in areas such as dimensionality reduction, optimization techniques, and data representation. Emphasis was laid on concepts like eigenvalues and eigenvectors, which are pivotal in algorithms like Principal Component Analysis (PCA).

Throughout the session, Dr. Dinesh effectively connected theoretical concepts to real-world applications, showcasing their relevance in fields like image processing, speech recognition, and predictive analytics. He also shared insights into industry trends and the skills needed to thrive in the evolving landscape of AI and ML.

The online format allowed participants to engage in a lively Q&A session, where Dr. Dinesh addressed questions about career paths, advanced study resources, and project ideas. The talk left attendees inspired to deepen their knowledge of linear algebra and its application in cutting-edge technologies, marking the session as both educational and motivating.

HANDS-ON WITH TECHNOLOGY: BRIDGING THEORY AND PRACTICE

Empowering Students with IoT: Hands-On Workshop by Dr. Lohith MS and Prof. Nandeesh G S

A transformative workshop on the **Internet of Things (IoT)** was conducted for engineering students in February 2023, focusing on the practical use of **Arduino** and **Raspberry Pi** boards. The workshop aimed to introduce participants to the fundamentals of IoT and equip them with hands-on experience in developing smart devices and applications.

The session began with an overview of IoT concepts, explaining its significance in today's interconnected world. Participants were then introduced to the features and capabilities of Arduino and Raspberry Pi boards, the core tools for building IoT projects. Step-by-step tutorials guided students through setting up devices, interfacing sensors and actuators, and programming using popular languages like Python and C++.

Students also explored techniques for data collection, processing, and transmission using IoT platforms. This engaging and interactive workshop not only enhanced students' technical skills but also fostered creativity and problem-solving abilities. It was an inspiring experience that encouraged participants to delve deeper into IoT technologies and their boundless possibilities.

Empowering Educators: Innovating for Excellence

A One-Week National Level Online Faculty Development Programme on "Machine learning and data analytics using MATLAB" from 24th to 29th April 2023

The Department of Electronics and communication Engineering, in association with ISTE and IETE, successfully organized a *One-Week National Level Online Faculty Development Programme* on **"Machine Learning and Data Analytics using MATLAB"** from 24th to 29th April 2023.

The program featured esteemed resource persons, including Dr. Pramod Kumar Naik, Associate Professor in the Department of CSE at Dayanand Sagar Institute of Technology, Bengaluru, and Mr. Rakshith B S, a Senior Application Engineer at CoreEL Technologies. Also contributing their expertise were Dr. P. Manjunatha, Professor and Academic Dean at JNNCE, Shivamogga, and Dr. S. Pramod Kumar, Associate Professor in the Department of ECE at JNNCE, Shivamogga. Their diverse expertise and knowledge greatly enriched the sessions, providing valuable insights to participants.

This enriching program was specifically designed to equip faculty members with cutting-edge knowledge and practical insights into the dynamic fields of machine learning and data analytics, leveraging the versatile capabilities of MATLAB. Participants were guided through a structured curriculum by renowned experts from academia and industry, covering foundational concepts, advanced techniques, and hands-on applications.

The week-long event witnessed enthusiastic participation from a diverse group of educators and researchers nationwide. Interactive sessions, engaging workshops, and collaborative discussions provided an excellent platform for knowledge sharing and innovation. The program concluded with positive feedback, emphasizing its relevance in addressing emerging trends in technology and academia.

The initiative served as a cornerstone for fostering a community of empowered educators ready to inspire and innovate in the realm of data-driven technologies.

STUDENT INVOLVEMENT IN INTER-INSTITUTE COMPETITIONS AND ACTIVITIES

Sl.No	Student Name	USN	Date	Paper title/Conference Name/workshop/Hackathon	Place
1	GARIMA M HIREMATH	1KI19EC024	23rd August to 27th September 2022	Completed internship on Full Stack Web Development	Varcons Technologies Pvt Ltd, Bangalore
2	NAMITH PRASAD R G	1KI20EC025	29th April 2023	Participated in "SILICONS, Intercollegiate VLSI Project Expo"	RNS Institute of Technology, Bengaluru
3	NAVAMI MOULYASHREE M	1KI20EC026	29th April 2023	Participated in "SILICONS, Intercollegiate VLSI Project Expo"	RNS Institute of Technology, Bengaluru
4	NAVAMI MOULYASHREE M	1KI20EC026	15th & 16th December 2022	Participated in "IDEATHON-2022-GALACTIC PROBLEM-SOLVER" organized by NASA International Space Apps Challenge	JSSS Academy of Technical Education, Bengaluru
5	POOJA T R	1KI20EC028	5th May 2023	Participated in 7th National level project competition "IEEE project EXPO-2023"	Organized by GSSSIETW, Mysuru
6	RAKSHITHA D R	1KI20EC030	29th April 2023	Participated in "SILICONS, Intercollegiate VLSI Project Expo"	RNS Institute of Technology, Bengaluru
7	RAKSHITHA D R	1KI20EC030	15th & 16th December 2022	Participated in "IDEATHON-2022-GALACTIC PROBLEM-SOLVER" organized by NASA International Space Apps Challenge	JSSS Academy of Technical Education, Bengaluru
8	ROHAN Y	1KI20EC033	5th May 2023	Participated in 7th National level project competition "IEEE project EXPO-2023"	Organized by GSSSIETW, Mysuru

STUDENT INVOLVEMENT IN INTER-INSTITUTE COMPETITIONS AND ACTIVITIES

Sl.No	Student Name	USN	Date	Paper title/Conference Name/workshop/Hackathon	Place
9	ROHAN Y	1KI20EC033	15th & 16th December 2022	Participated in "IDEATHON-2022-GALACTIC PROBLEM-SOLVER" organized by NASA International Space Apps Challenge	JSSS Academy of Technical Education, Bengaluru
10	SUCHITHRA C	1KI20EC038	22nd to 24th June 2023	Certified for completing Java Programming Essentials Bootmap(3 Days)	Lets Upgrade(Online)
11	SUCHITHRA C	1KI20EC038	23rd July 2022 to 27th May 2023	Certified for Completing TCS ION Career Edge - Young Professional Course	TCS ION Carrier Edge(Online)
12	SUCHITHRA C	1KI20EC038	29th April 2023	Participated in "SILICONS, Intercollegiate VLSI Project Expo"	RNS Institute of Technology, Bengaluru
13	SUCHITHRA C	1KI20EC038	19th August 2022	online course completed on Basics of Python	Infosys
14	SUCHITHRA C	1KI20EC038	Dec-22	Online Courses on Quantitative Aptitude Basics	Provided by Great Learning Academy
15	SUCHITHRA C	1KI20EC038	28th January 2023	online course completed on Introduction to Machine Learning	Infosys/ Springboard
16	SUCHITHRA C	1KI20EC038	12th April 2023	online course completed on Introduction to C	Sololearn
17	SUCHITHRA C	1KI20EC038	12th April 2023	online course completed on Basics of JavaScript Programming	Openweaver

STUDENT INVOLVEMENT IN INTER-INSTITUTE COMPETITIONS AND ACTIVITIES

Sl.No	Student Name	USN	Date	Paper title/Conference Name/workshop/Hackathon	Place
18	SUCHITHRA C	1KI20EC038	20th May 2023	Completed Online Engineering Tech Quiz	Scontinent Technologies Pvt Ltd, Bangaluru
19	SUPREETH A L	1KI20EC040	5th May 2023	Participated in 7th National level project competition "IEEE project EXPO-2023"	GSSSIETW, Mysuru
20	SUPREETH A L	1KI20EC040	19th January 2023	Completed online course on Network Fundamentals	Infosys/ Springboard
21	SUPREETH A L	1KI20EC040	19th January 2023	Completed online course on IOT Edge Computing and IOT Analytics	Infosys/ Springboard
22	LAHARI BHARADWAJ N	1KI21EC402	17th August 2022	Completed online course on Time Management	Infosys/ Springboard
23	LAHARI BHARADWAJ N	1KI21EC402	17th August 2022	Completed online course on Basics of Python	Infosys/ Springboard
24	SANTHOSH S V	1KI21EC404	Jan-23	Completed online course on Python	SYMPOSIUM, IIT, Mumbai
25	SANTHOSH S V	1KI21EC404	Feb-23	Completed online course on UI /UX for Beginners	Great Learning Academy
26	SANTHOSH S V	1KI21EC404	Feb-23	Completed online course on Augmented Reality	SYMPOSIUM, IIT, Mumbai
27	YASHASWINI G K	1KI21EC113	16th to 17th 2022	Certificate of Participation in " HACKD-22"	Kalpataru Institute of Technology, Tiptur

TOP OF THE CLASS

TOPPER LIST OF ODD SEM 2022

SEM	USN	NAME	CGPA
1	1KI22EC092	SANJITHA S	8.85
3	1KI21EC019	CHANDANA D	9.47
5	1KI20EC002	AKARSH A S	8.66
7	1KI19EC036	LIKHITHA A L	9.46

TOPPER LIST OF EVEN SEM 2023

SEM	USN	NAME	CGPA
2	1KI22EC097	SHREEGANGA H R	9.23
4	1KI21EC019	CHANDANA D	9.54
6	1KI20EC002	AKARSH A S	8.77
8	1KI19EC036	LIKHITHA A L	9.48

PLACEMENT ACHIEVEMENTS AT A GLANCE

Sl.No.	Student Name	USN	On/Off Campus	Company
1	Akuthota Chandana Sree	1KI19EC003	On Campus	Intellipaat
				CADMAXX
				HCL (Through Smart Brains)
			Off Campus	SYNTAX
2	Anusha SP	1KI19EC009	On Campus	HCL (Through Smart Brains)
3	Arun Govind GR	1KI19EC012	On Campus	Palle Technologies
				HCL (Through Smart Brains)
				CADMAXX
4	Chaya D	1KI19EC016	On Campus	HCL (Through Smart Brains)
5	Chinmaya M	1KI19EC019	On Campus	Palle Technologies
6	Disha S T	1KI19EC021	On Campus	TCS
				Global Quest Tech
7	Garima M Hiremath	1KI19EC024	On Campus	CADMAXX
				Intellipaat
8	Gayithri C N	1KI19EC025	On Campus	HCL (Through Smart Brains)
				CADMAXX
			Off Campus	Velankani Electronics and Automotive Pvt Ltd
9	Hamsa R D	1KI19EC027	On Campus	Global Quest Tech
10	Harshitha R	1KI19EC030	On Campus	CADMAXX
				HCL (Through Smart Brains)
11	Imtiyaz Ahmad Mir	1KI19EC032	On Campus	Intellipaat
12	Keerthana S M	1KI19EC033	On Campus	Skill vertex
13	Likhitha A L	1KI19EC036	On Campus	Global Quest Tech
14	Mithushree M	1KI19EC039	On Campus	Destination Technologies
				TCS
15	Navyashree K N	1KI19EC042	On Campus	Skill vertex
16	Nithin TK	1KI19EC044	On Campus	HCL (Through Smart Brains)

Sl.No.	Student Name	USN	On/Off Campus	Company
17	Prathama shree A	1KI19EC048	On Campus	HCL (Through Smart Brains)
18	Ranjith Kumar.B	1KI19EC050	On Campus	HCL (Through Smart Brains)
				Intellipat
19	Sachin T C	1KI19EC052	On Campus	HCL (Through Smart Brains)
				CADMAXX
20	Sangam A M	1KI19EC054	On Campus	HCL (Through Smart Brains)
21	Sanjana R	1KI19EC055	On Campus	Global Quest Tech
				Rinex
22	Sheethal T G	1KI19EC056	On Campus	Skill vertex
				Otis Elevators
23	Sonika M	1KI19EC057	On Campus	HCL (Through Smart Brains)
24	Suman U M	1KI19EC061	On Campus	HCL (Through Smart Brains)
25	Vidyashree H	1KI19EC064	On Campus	Technologics
26	Ravindrappa gari Sreenath	1KI19EC051	Off Campus	IBM
27	Akash SP	1KI19EC002	Off Campus	Excelmax Technologies Pvt.Ltd
				Qualcomm
28	Manoj P	1KI19EC037	Off Campus	Wipro
29	Chandana swamy	1KI19EC015	On Campus	Destination Technologies
30	Kirankumar J	1KI19EC035	On Campus	Destination Technologies
31	Anitha D	1KI20EC400	On Campus	CADMAXX
32	Keerthana S M	1KI19EC033	On Campus	CADMAXX
33	Meghana C A	1KI19EC038	On Campus	CADMAXX

NURTURING EXCELLENCE: FACULTY'S ROLE IN PROFESSIONAL DEVELOPMENT

Sl. No	Name Of the Faculty	Details Of the Participation	Number Of Days	JULY 22 TO JUNE 23
1	Dr. S V Rajashekararadhya	"Advanced AI and Data Analytics with implementation Techniques". "Digital Image Processing using MATLAB" "Outcome Based Education"	05 05 07	12 to 16 dec 2022 20 to 24 feb 2023 25 To 31 July 2022
2	Prof. Channabasayya Mathad	"Next Generation wireless Networks for autonomous Intelligent Communications". "Deep Learning and its Applications"	05 05	26 To 30 Dec 2022 06 To 10 Mar 2023
3	Prof. Prashanth N R	"Next Generation Wireless Networks for Autonomous Intelligent Communications".	05	26 To 30 Dec 2022
4	Prof. Hadimani Shivakumar	"Advances in VLSI design using CADENCE". "Ability Enhancement Courses in ECE"	05 05	17 To 21 Oct 2022 12 To 16 Sep 2022
5	Prof. Prathibha C	"Analog and Digital IC design Semiconductor industry approach". "Inculcating Universal Human Values in Technical Education". "Deep Learning and its Applications"	05 05	26 To 30 Sep 2022 10 To 14 Oct 2022 06 To 10 Mar 2023
6	Prof. Anand U Hiremath	"Ability Enhancement Courses in Electronics and Communication Engineering"	05	12 To 16 Sep 2022

NURTURING EXCELLENCE:
FACULTY'S ROLE IN PROFESSIONAL DEVELOPMENT

Sl. No	Name Of the Faculty	Details Of the Participation	Number Of Days	JULY 22 TO JUNE 23
7	Prof. Pradeepkumar S K	"Analog and Digital IC design Semiconductor industry approach".	05	26 To 30 Sep 2022
		"Research Methodology, Teaching Learning and Evaluation"	07	10 To 16 Mar 2022
8	Dr. Lohith M S	"Cyber Security and Forensics"	05	2 To 6 May 2023
		"Python Programming and its Application"	05	8 To 12 May 2023
9	Prof. Sunil Kumar K M	"Next Generation Wireless Networks for Autonomous Intelligent Communications".	05	26 To 30 Dec 2022
		"IOT Based Smart Automation System"	05	22 To 27 Aug 2022
10	Prof. Smitha M M	"Analog and Digital IC design Semiconductor industry approach".	05	26 To 30 Sep 2022
		"Inculcating Universal Human Values in Technical Education"	05	10 To 14 Oct 2022

ACADEMIC EXCELLENCE: FACULTY RESEARCH AND PUBLICATIONS HIGHLIGHTS

JOURNAL PUBLICATIONS FOR THE YEAR 2022–23 (JULY 2022 –JUNE 2023)			
FACULTY NAME	TITLE	PUBLICATION DETAILS	REMARKS
Dr. S V Rajashekararadhya	Recognition of Kannada Character Scripts Using Hybrid Feature Extraction and Ensemble Learning Approaches	Cybernetics and Systems.Taylor & Francis Group, LLC	Page no 1-37 https://doi.org/10.1080/01969722.2023.2175145
Dr. S V Rajashekararadhya	Efficient Face Recognition System Using Z-Normalization and Moore Penrose-Based Deep Convolutional Neural Network	Gongcheng Kexue Yu Jishu/Advanced Engineering Science	ISSN: 2096-3246 Volume 54, Issue 02, October, 2022 Page no 3177-3202
Dr G.S.Yogananda	Multiobjective Reptile Search Algorithm Based EffectiveImage Deblurring and Restoration	Journal of Artificial Intelligence and Technology,	22 May 2023; Published online 17 June 2023) 2023, 3,PAGE NO 126-133https://doi.org/10.37965/jait.2023.0204
Dr.Hadimani Shivakumar	Study of Galvanic Charging Discharging Properties of Grapheme Nanoplatelets Incorporated Epoxy Corbon Fabric Composites	J Polym master Print publication pvt ltd	vol 40 no 1 2023.8393Page No-DOI. http//doi.org/10.32381/JPM.2023.40.18
Dr.Hadimani Shivakumar	Investigations on the Influence of Nylon-66 Interleaving on the Fiber Matrix Interactions of Quasi- Isotropic Corbon Epoxy Composites Using DMA	INFORMATIC JOURNALS Journal of mines, metals and fuels	PRINT ISSN;0022-2755 WWW.informaticsjournals.com/index.php/jmmf Page No-53-62
Dr.Hadimani Shivakumar	Analysis of dielectrical properties of corbon –epoxy composite laminates	INFORMATIC JOURNALS Journal of Mines, Metals and Fuels	71 (12A).38.42.2023Print ISSN : 0022-2755 Page no- 38-42 DOI.10.18311/jmff/2023/45493

ACADEMIC EXCELLENCE: FACULTY RESEARCH AND PUBLICATIONS HIGHLIGHTS

JOURNAL PUBLICATIONS FOR THE YEAR 2022–23 (JULY 2022 –JUNE 2023)			
FACULTY NAME	TITLE	PUBLICATION DETAILS	REMARKS
Dr G.D.Gurumurthy	Study of galvanic charging discharging properties of grapheme nanoplatelets incorporated epoxy corbon fabric composites	J Polym master	Vol 40 no 1 2023.8393 Print publication pvt ltd DOI. http//doi.org/10.32381/JPM.2023.40.18
Dr G.S. Nandeesh	Lung parenchyma segmentation and nodule detection using deep learning	SPRINGER The Optical Society of India J Opt	Published online: 29 April 2023 Page no 635–642 https://doi.org/10.1007/s12596-023-01187-w
S Nandini	Lung parenchyma segmentation and nodule detection using deep learning	SPRINGER The Optical Society of India J Opt	Published online: 29 April 2023 Page no 635–642 https://doi.org/10.1007/s12596-023-01187-w
CONFERENCE 2022-23 (JULY 2022 – JUNE 2023)			
Dr. S V Rajashekararadhya	A Design of Face Recognition Model with Spatial Feature Extraction using Optimized Support Vector Machine	2023, 2nd International Conference for Innovation in Technology (INOCON) Bangalore, India.	Mar 3-5, 2023 PAGE NO 1-8

Tiny Chips, Huge Impact: The Scope of VLSI and Semiconductor Advancements

The world of electronics has witnessed a phenomenal transformation over the years, thanks to the advancements in Very Large-Scale Integration (VLSI) technology and semiconductors. These tiny chips are at the heart of modern devices, driving innovation and shaping industries globally. For students pursuing Electronics and Communication Engineering (ECE), understanding the scope of VLSI and semiconductor technology unlocks a treasure trove of opportunities to build a promising career.

Unraveling VLSI: A Foundation for Future Innovations

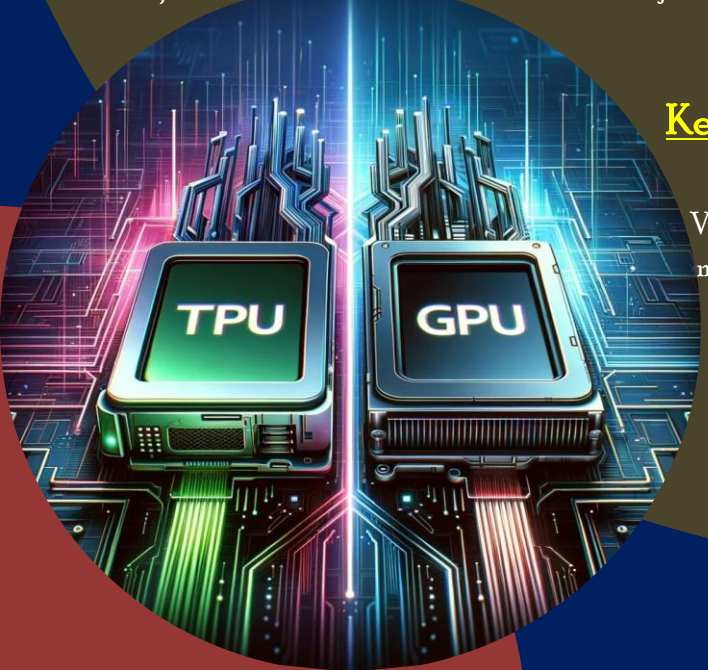
VLSI refers to the process of creating integrated circuits (ICs) by combining millions (or billions) of transistors onto a single chip. These chips power everything from smartphones and laptops to medical equipment and satellites. The evolution from simple ICs to VLSI-enabled chips has transformed the electronics industry, enabling devices to be smaller, faster, and more energy-efficient.

For ECE students, VLSI offers a unique blend of hardware and software expertise. The field encompasses areas like digital design, analog and mixed-signal design, physical design, verification, and testing. By mastering these domains, students can contribute to cutting-edge technologies like artificial intelligence (AI), 5G communications, autonomous vehicles, and the Internet of Things (IoT).

Semiconductor Innovations: The Driving Force

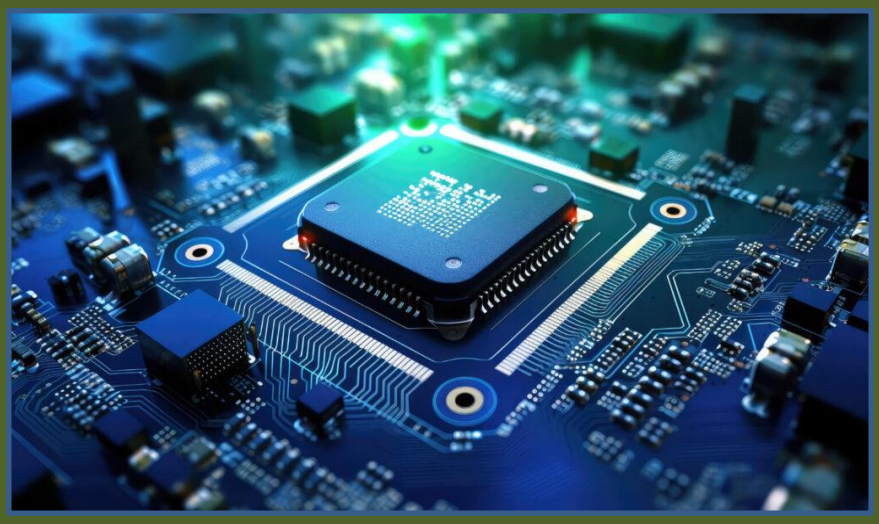
Semiconductors act as the building blocks of VLSI chips. These materials possess properties that allow them to conduct electricity under certain conditions, making them ideal for use in electronic devices. The industry has seen remarkable innovations, such as the shift to smaller process nodes (e.g., 7nm, 5nm, and now 3nm technology) and the development of FinFET and gate-all-around (GAA) transistors.

India is emerging as a significant player in the semiconductor ecosystem. Initiatives like the Indian Semiconductor Mission (ISM) aim to boost domestic semiconductor manufacturing and design. This development positions India as a hub for innovation and job creation in the VLSI sector.



Key Benefits of VLSI: Miniaturization, Performance, and Efficiency

VLSI makes devices small. They also use less power. Plus, they work much faster. It boosts reliability too! Take your phone, for example. VLSI makes the battery last longer. The chip also makes apps run smoother. This is because the chips are small and efficient.



VLSI and Semiconductors: Driving Innovation Across Industries

VLSI and semiconductors are everywhere. They're changing many parts of our lives.

- *Computing and Consumer Electronics*

  VLSI powers computers and phones. It also runs tablets and other gadgets. Chips are getting faster. They also hold more memory. Graphics are more amazing as well! Better VLSI chips means you get a better experience. Games look cooler. Videos stream smoother. Everything just works better.

- Automotive and Transportation

  Cars are becoming smarter with VLSI. Self-driving cars use it to see the road. Systems help drivers stay safe. Electric cars are getting better because of it, too. Sensors and control systems use VLSI to keep you safe while driving. It makes things like automatic braking possible.

- Healthcare and Medical Devices

  VLSI is changing healthcare. It improves medical images and diagnoses. It even helps with drug delivery. Implantable devices like pacemakers use VLSI too. Personalized medicine is becoming more real. Devices using VLSI can be life-saving. MRI scanners give doctors better pictures. Pacemakers keep hearts beating strong.

- Telecommunications and Networking

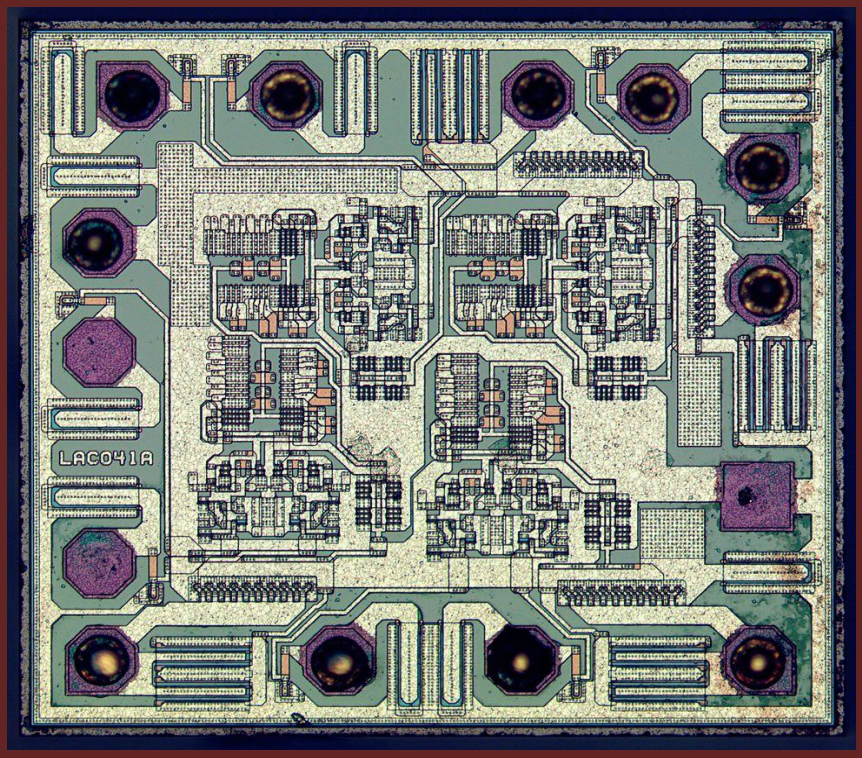
  VLSI makes fast internet possible. It boosts mobile communication. Data centers rely on VLSI. It's also important for 5G and future networks. Without VLSI, we would not have fast streaming or quick downloads. It is a critical part of how we communicate today.

Emerging Architectures: Neuromorphic Computing and Quantum Computing

New types of computing are being developed. Neuromorphic computing mimics the brain. Quantum computing uses quantum mechanics. These could change how we use computers.

The Rise of AI and Specialized Hardware

AI is becoming more popular. We need special chips for it. GPUs and TPUs help run AI programs. Some companies make custom chips too.



Career Opportunities in VLSI and Semiconductors

The VLSI and semiconductor industries offer a wide array of career paths for ECE students. Some key roles include:

- Design Engineer: Responsible for developing and designing ICs and chips
- Verification Engineer: Ensures that the designs meet specifications and function correctly.
- Physical Design Engineer: Focuses on the physical implementation of the design onto silicon.
- Test Engineer: Tests chips to identify and rectify defects.
- Process Engineer: Works on semiconductor fabrication processes.

Globally, companies like Intel, TSMC, NVIDIA, AMD, and Samsung Electronics lead the industry. In India, firms such as Wipro, Tata Elxsi, and HCL, along with startups, are creating a vibrant job market. Additionally, partnerships between global giants and Indian firms are expanding opportunities for Indian talent.

The Global Scope

The demand for VLSI professionals is rising worldwide, driven by advancements in AI, IoT, and quantum computing. India, with its growing semiconductor ecosystem, offers immense potential for students to contribute to a global industry while making a mark in domestic innovations.

Building a Successful Career

To thrive in this field, students should focus on acquiring both theoretical knowledge and practical skills. Key steps include:

1. Developing Core Competencies: Master VLSI design tools like Cadence, Synopsys, and Mentor Graphics. Strengthen concepts in digital electronics, CMOS technology, and semiconductor physics.
2. Pursuing Internships: Internships provide hands-on experience and exposure to real-world projects.
3. Engaging in Research and Projects: Work on innovative projects or publish research papers to showcase your skills.
4. Networking: Attend industry conferences, webinars, and tech meetups to build connections and stay updated on trends.
5. Higher Education and Certifications: Pursuing a master's degree or specialized certifications can give you a competitive edge.

Conclusion

The journey into the world of VLSI and semiconductors is as challenging as it is rewarding.

For ECE students, this field represents a gateway to shaping the future of technology, not just in India but across the globe.

By equipping themselves with the right skills and staying curious, students can ensure that these tiny chips have a monumental impact on their careers and the world.

RADAR: Unlocking Opportunities for ECE Students

RADAR, which stands for Radio Detection and Ranging, is a pioneering technology that has transformed fields like communication, navigation, and sensing. This technology operates by transmitting radio waves and analyzing the echoes that bounce back from objects, allowing us to detect their position, speed, and other characteristics. For Electronics and Communication Engineering (ECE) students, understanding RADAR systems is more than just academic—it's a gateway to exciting career opportunities

Applications of RADAR

RADAR technology is incredibly versatile, with applications spanning various industries:

- Aviation: Used in air traffic control to guide aircraft safely.
- Automotive: Powers Advanced Driver Assistance Systems (ADAS), such as collision avoidance and adaptive cruise control.
- Weather Forecasting: Tracks storms and precipitation patterns using Doppler RADAR.
- Defence and Space: Integral to surveillance, missile guidance, and space exploration.
- Marine Navigation: Ensures safe passage for ships by detecting obstacles.

Each of these applications highlights the critical role RADAR plays in modern technology.

Relevance to ECE Students

Studying RADAR systems integrates concepts from key ECE domains such as signal processing, RF and microwave engineering, and electromagnetic theory. It offers hands-on exposure to designing antennas, implementing algorithms, and optimizing systems. This makes it a perfect blend of theoretical knowledge and practical skills.

Career Scope

The demand for RADAR professionals is growing globally, with opportunities in:

- The demand for RADAR professionals is growing globally, with opportunities in:
- Défense and Aerospace: Developing sophisticated RADAR systems.
- Automotive Industry: Innovating safety features for autonomous vehicles.
- Research and Development: Pioneering next-generation RADAR technologies.
- Telecommunications: Exploring RADAR's potential in sensing and communication.

India is seeing significant growth in its defense and automotive sectors, offering ample opportunities for RADAR engineers. Organizations like DRDO, ISRO, and BEL are at the forefront, alongside global leaders like Raytheon and Bosch.

How to Build Expertise in RADAR Technology

To build a career in RADAR, ECE students should focus on the following:

1. Academic Knowledge: Study subjects like digital signal processing, RF and microwave engineering, and electromagnetic waves.
2. Practical Exposure: Gain hands-on experience through laboratory experiments, projects, and internships in relevant fields.
3. Certifications and Courses: Enroll in specialized courses or certifications in RADAR systems and signal processing.
4. Stay Updated: Keep up with the latest trends and developments in RADAR technology by attending seminars and reading research papers.

Conclusion

For ECE students, RADAR technology represents a perfect blend of theoretical knowledge and practical application. By diving into this fascinating field, students can not only contribute to technological advancements but also secure a rewarding career in industries that are shaping the future of our world. The next big leap in RADAR technology could very well come from your ideas—are you ready to make an impact?

THE SPIRIT OF PROGRESS

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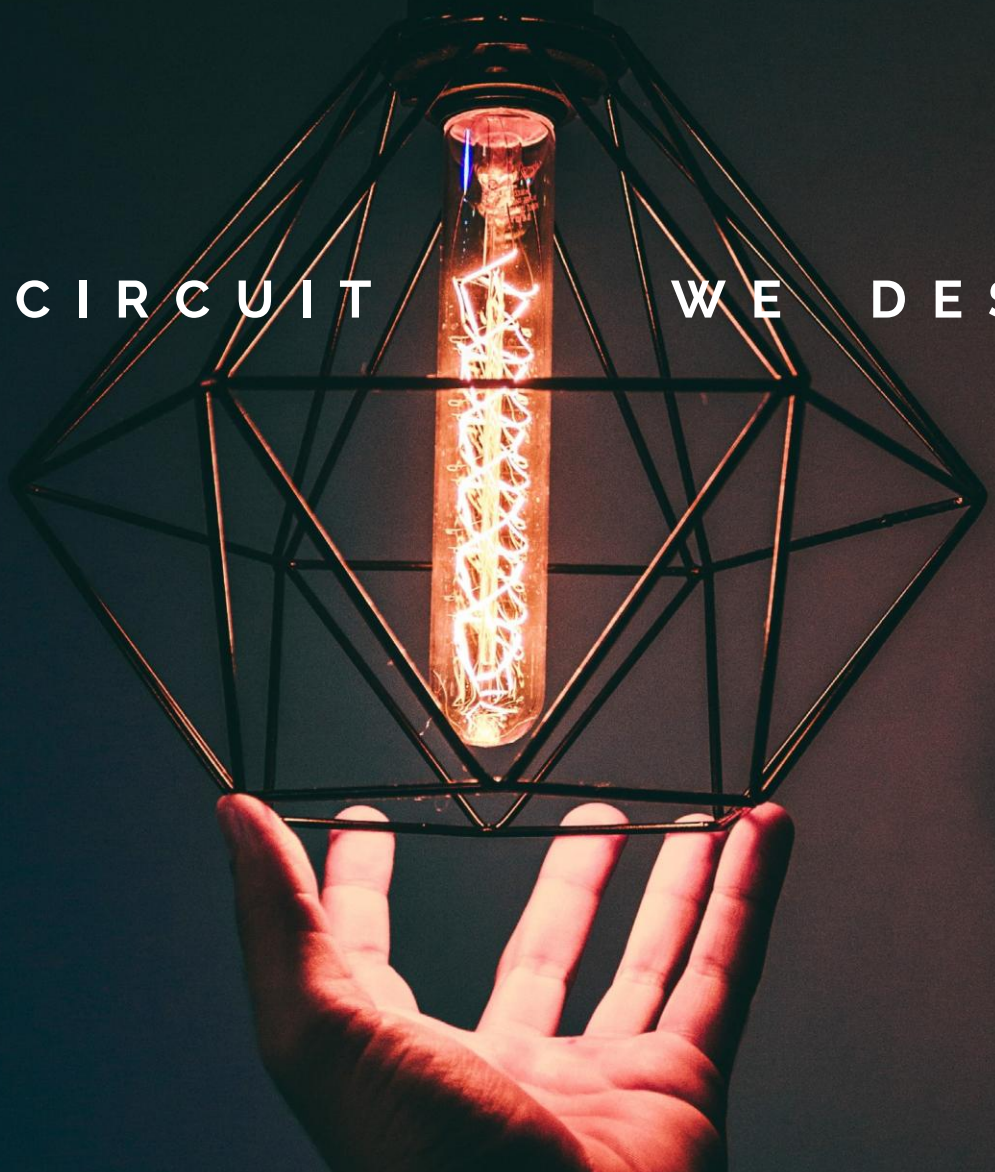

THE CIRCUIT WE DESIGN

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