RAJEEV INSTITUTE OF TECHNOLOGY

INFORMATION SCIENCE AND ENGINEERING

INFOSPHERE 2023

The magazine of the RIT society of Information Science and Engineering

DECEMBER 2023 EDITION



BEYOND VISION, BEYOND LIMITS:
AUGMENTED AND VIRTUAL REALITY,
TRANSFORMING PERSPECTIVES.

Department of Information Science and Engineering

MOU With







RAJEEV INSTITUTE OF TECHNOLOGY

Plot 1-D, Growth Center, B-M Bypass Road, Hassan, Karnataka 573201

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INFORMATION SCIENCE AND ENGINEERING

VISION

To be a center of excellence in Information Science and Engineering education by creating competent professionals to deal with real-world challenges in the industry, research and society.

MISSION

- To empower students to become competent professionals, strong in the basics of Information science and engineering through experiential learning.
- To strengthen the education and research ecosystem by inculcating ethical principles, and facilitating interaction with premier institutes and industries around the world.
- Promote innovation and entrepreneurship to fulfill the needs of society and industry.

PSO (Program Specific Outcomes)

- Analyse and develop software applications by applying skills in the field of coding languages, algorithms, operating systems, database management, web design and data analytics.
- Apply knowledge of computational theory, system design and computer network concepts for building networking and internet-based applications.

PEO (Program Educational Objectives)

- Analyse, design and implement solutions to real-world problems in the field of Information Science and Engineering with a multidisciplinary setup.
- Pursue higher studies with a strong knowledge of basic concepts and skills in Information Technology disciplines.
- Adapt to emerging technologies towards continuous learning with ethical values, good communication skills, leadership qualities and self-learning abilities.

PRESIDENT'S MESSAGE



Dr. Rachana Rajeev M.B.B.S., M.D.

Dear Esteemed Students, Faculty, and Staff,

I am pleased to address you through this message for the latest issue of our esteemed Information Science and Engineering department magazine, 'Infosphere-2023'.

Rajeev Institute of Technology stands as a testament to the vision and perseverance of its esteemed founder, Dr. V Rajeev. His visionary leadership has paved the way for a comprehensive learning environment, emphasizing not only academic excellence but also character development, ethical values, and social responsibility.

Over the past decade, the Department of Information Science and Engineering has emerged as a center of academic excellence and innovation. The department is dedicated to nurturing young minds, equipping them with knowledge and skills to shape a better future. We have witnessed the transformation of numerous students who have passed through our doors, and we take pride in their achievements.

'Infosphere-2023', our department magazine, provides a platform for the diverse voices within our community. Within its pages, you will find a wealth of knowledge and inspiration, covering various topics that reflect the multifaceted nature of our engineering community. From accomplishments to innovations at the intersection of modern technology, to the remarkable achievements of our students in academics and sports, this magazine truly embodies the spirit of innovation, passion, and societal engagement that defines the Information Science and Engineering department.

I'd like to congratulate the Department of Information Science and Engineering for partnering with ARK Infosolutions, promoting the development of innovative applications in Augmented Reality and Virtual Reality.

My sincere gratitude goes to the editorial team, faculty advisors, and contributors for their dedication in making the 'Infosphere - 2023' edition a success.

I'm hopeful that 'Infosphere' will continue to evolve, serving as a source of inspiration and reflection for our department community. Let's honor the legacy of Dr. V Rajeev by embodying his vision of excellence, innovation, and societal transformation.

Sincerely,
Dr. Rachana Rajeev
President, RET

PRINCIPAL'S MESSAGE



Dr. Mahesh P K B.E., M.Tech., Ph.D.

Dear everyone,

I am delighted to announce the release of our annual departmental magazine, "Infosphere-2023," by the Department of Information Science and Engineering. "Learning is a lifelong journey that begins at birth and continues until death," and Rajeev Institute of Technology offers a platform for every student to enhance their learning experience through this magazine.

As you browse through its pages, you will discover the significant achievements of our department this year. Additionally, our talented students have creatively expressed their thoughts, ideas, hopes, feelings, aspirations, and convictions. Faculty members have actively participated in various activities aimed at enhancing necessary skills. This magazine will serve as a valuable guide for both faculty and future batches of students in selecting activities that align with their interests and future career paths. I extend my congratulations to students who have excelled in academics as well as co-curricular and extra-curricular activities.

I commend the head, teaching and non-teaching staff, editorial board, and students of the department magazine committee for their efforts. I hope you all find the contents of this magazine enriching and enlightening as you explore its pages.

Best regards,

HOD'S MESSAGE



Dr. Arjun B C B.E., M.Tech., Ph.D.

I am thrilled to share my thoughts on the release of our departmental magazine, "Infosphere-2023." It brings me great joy to reflect on the remarkable achievements and significant milestones we reached in the field of Information Science and Engineering in 2023. Throughout the year, we experienced growth, innovation, and collaboration, and I'd like to highlight some key moments.

Our department continues to be a center of creativity and learning, where groundbreaking research, exceptional student projects, and faculty accomplishments further enhance our reputation in Information Science and Engineering excellence. A notable event of 2023 was the successful workshop on Augmented Reality (AR) and Virtual Reality (VR), which gathered experts and enthusiasts to explore the potential of these technologies. It was inspiring to witness the creativity that emerged from this workshop.

Our AR/VR Center of Excellence offers internships to lateral students, facilitating practical application of theoretical knowledge and providing valuable hands-on experience in this rapidly evolving field.

Our department facilitated global collaboration through the International Conference on Our department fostered global collaboration through the International Conference on Advances in Computing, Control, and Telecommunication Technologies, facilitating insights from experts worldwide. We also addressed cyber security concerns by conducting a comprehensive Faculty Development Program in collaboration with CDAC, focusing on enhancing faculty expertise in this area, and organizing sessions on blockchain technology. Special sessions, including one on the ISRO START space program, enriched student insights. Furthermore, social outreach activities like 'Know Your CSI' and workshops on ethical hacking expanded our department's engagement beyond academics, enriching our community.

I express my gratitude to everyone for their dedication, hard work, and passion, which contributed to our collective success. Together, I believe we will continue to excel in the field of Information Science and Engineering.

Congratulations to the students and staff of the department editorial committee for their efforts in producing this literary work.

FACULTY DETAILS

TEACHING STAFF



Dr. Arjun B C
Professor & Head,
Department of Information Science & Engineering



Dr. Prathibha G
Associate Professor,
Department of Information Science & Engineering



Dr. Sharath M N
Associate Professor,
Department of Information Science & Engineering



Prof. Vijaya Kumar Yadhav
Assistant Professor,
Department of Information Science & Engineering



Prof. Nalini H C
Assistant Professor,
Department of Information Science & Engineering



Prof. Anil Kumar K N
Assistant Professor,
Department of Information Science & Engineering



Prof. Sindhu Jain A M
Assistant Professor,
Department of Information Science & Engineering



Prof. Sahana R S
Assistant Professor,
Department of Information Science & Engineering



Prof. KannikaLakshmi D G
Assistant Professor,
Department of Information Science & Engineering

NON-TEACHING STAFF



Hruthik B Gowda
Programmer



Lava C P
Attender



Pushpa U
Lab Assistant



Ranjitha P
Instructor



Rohith A N
Assistant Instructor

MEMBERS OF DEPARTMENT ADVISORY BOARD



Dr. Arjun B C
(Chairman & Co-ordinator)
Professor & Head,
Department of Information Science & Engineering



Dr. Prathibha G
(Member Secretary)
Associate Professor,
Department of Information Science & Engineering



Dr. Sharath M N
(Internal Member)
Associate Professor,
Department of Information Science & Engineering



Mr. Anil Kumar K N
(Internal Member)
Assistant Professor,
Department of Information Science & Engineering



Mr. Santhosh Kumar M J
(Industry Member)
Manager Development,
Ness Digital Engineering,
Bengaluru



Mr. Madhesh H M
(Industry Member)
Senior Principal Software Engineer,
Accion Labs,
Bengaluru



Mr. Anil Kumar
(Alumni)
Senior Developer,
Cognizant, Bengaluru

MEMBERS OF PROGRAM ASSESSMENT COMMITTEE



Dr. Arjun B C
(Chairman & Program Co-ordinator)
Professor & Head,
Department of Information Science & Engineering



Dr. Prathibha G
(Member Secretary)
Associate Professor,
Department of Information Science & Engineering



Mr. Anil Kumar K N
(Member)
Assistant Professor,
Department of Information Science & Engineering



Ms. Sindhu Jain
(Member)
Assistant Professor,
Department of Information Science & Engineering



Dr. Sharath M N
(Member)
Associate Professor,
Department of Information Science & Engineering

EDITORIAL COMMITTEE

FACULTY CO-ORDINATORS



Prof. Sindhu Jain A M
Assistant Professor,
Department of Information Science & Engineering



Prof. Sahana R S
Assistant Professor,
Department of Information Science & Engineering

STUDENT CO-ORDINATORS



Ankith C R
(Main Designer)
7th sem,
Department of Information Science & Engineering



Ishtartha P D
(Co-ordinator)
5th sem,
Department of Information Science & Engineering

LABORATORIES



Software Testing Laboratory



Mobile Application Development Laboratory



Internet of Things Laboratory



Application to Python Programming Laboratory



File Structure Laboratory



Web Programming Laboratory



Database Applications Laboratory



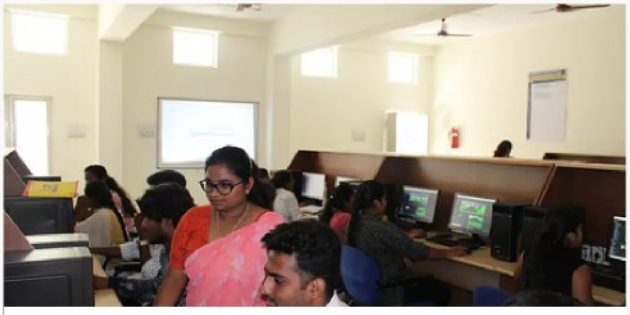
Design & Analysis of Algorithms Laboratory



Computer Network Laboratory



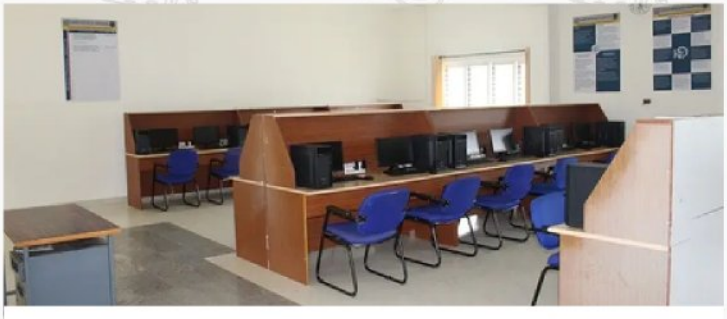
Artificial Intelligence and Machine Learning Laboratory



Data Structures with C / C++ Laboratory



Artificial Intelligence and Machine Learning Laboratory



Micro-controller and Embedded System Laboratory



Project Laboratory



Augmented Reality & Virtual Reality Laboratory

Center of Excellence

AUGMENTED REALITY AND VIRTUAL REALITY LAB

INAUGURATION OF THE "AUGMENTED REALITY & VIRTUAL REALITY" LAB







Laboratory Configurations			
SYSTEM CONFIGURATION	QUANTITY	PURCHASE DATE	TOTAL AMOUNT
Computer: Intel core i5 Processor, Gigabyte Mother Board, DDR4-16GB RAM, 500GB SSD, iball ATX Cabinet, 19" TFT Acer Monitor, Keyboard & Mouse, 8 port Switch, 16 port - Switch	25	13/08/2021	12,74,082/-
Server: Intel core i7 Processor, Gigabyte Mother Board, DDR4-32GB 3200MHz RAM, ATX Cabinet K501LRGB, 10GB-Graphic Card 750WSmps, Combo Multimedia, 32" Monitor, 2 TB SSD Hard Disk	1	15/02/2023	1,56,691/-
Meta Oculus Quest 2 - 128 GB with link cable	2	15/02/2023	94,400/-
OnePlus 10R - Mobile	2	15/02/2023	94,400/-
Unity Academic Alliance Program: Unity 3D software	25	15/02/2023	17,70,000/-

OVERVIEW OF THE LAB



Inside view of the Lab



VR Headset - Meta Oculus Quest 2



OnePlus 10R (For AR)



Alumnis' Experiencing VR

ASSISTANT TRAINERS (FOR UNITY GAME DEVELOPMENT)



Ankith C R
7th sem, ISE



Akash D
7th sem, ISE



Sachith Gowda M
7th sem, ISE



Sanjay K R
7th sem, ISE

WORKSHOPS & INTERNSHIPS

WORKSHOP ON "AUGMENTED REALITY & VIRTUAL REALITY"







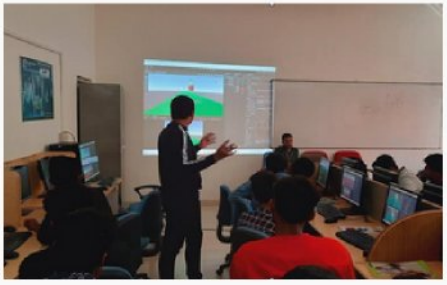
WORKSHOP ON "AUGMENTED REALITY DEVELOPMENT"

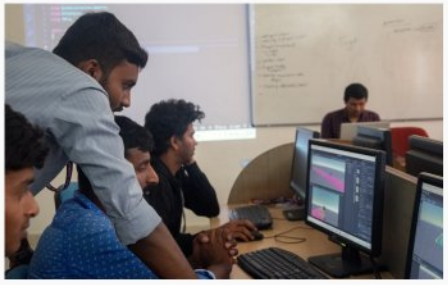


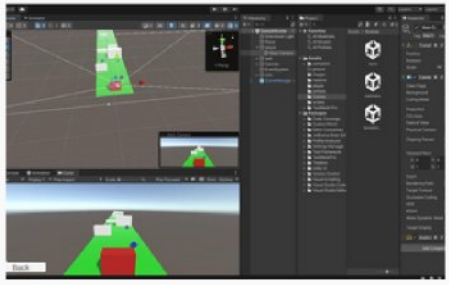




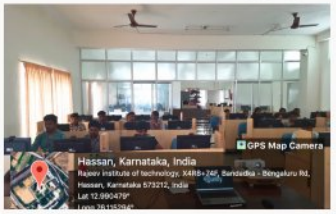
INTERNSHIP ON "2D & 3D GAME DEVELOPMENT" (For lateral entry students)







INTERNSHIP ON "2D & 3D GAME DEVELOPMENT" (For 5th sem Students)






PROJECTS DEVELOPED

Monster Chase

Developed by,

- Akash D
- Sachith Gowda M
- Sanjay K R

"We have developed a 2D Unity game called Monster Chase. The game features a player navigating through a world filled with various monsters and enemies. Players must strategically evade enemies by jumping on monsters and zombies to safeguard their lives. In the event of a player's defeat, there is an option to replay the current game. Our development incorporated straightforward animations, user-friendly interface designs, diverse zombie animations, and intricate zombie designs. Notably, the game dynamically generates zombies and enemies infinitely through automated processes, guided by C# code."





Maze Game

Developed by,

- Ankith C R

In crafting our AR maze game with Unity, we seamlessly integrated the virtual with the real, using AR Foundation for camera and sensor functionalities. Players explore dynamic mazes overlaying their surroundings, thanks to marker less tracking for object recognition. User-friendly touch controls or device movements guide navigation through the maze, ensuring an engaging experience. Our collaborative development efforts, covering 3D modeling, scripting, and AR optimization, resulted in a visually stunning and smooth performance across diverse devices. The game offers a novel and immersive way to tackle maze challenges in the augmented reality space.



Projects Developed on Augmented Reality

In our Unity-based augmented reality (AR) project, we crafted a marker-based AR app that seamlessly integrates 3D models upon detecting specific markers. Users experience an immersive overlay of virtual content as they showcase the marker.

Additionally, we developed a marker less AR app showcasing celestial bodies and a jet engine. This innovative application enables the placement of 3D models of planets and jet engines directly into the real world, transcending the limitations of markers. Users can explore and interact with these virtual objects as if they coexist in their physical surroundings.

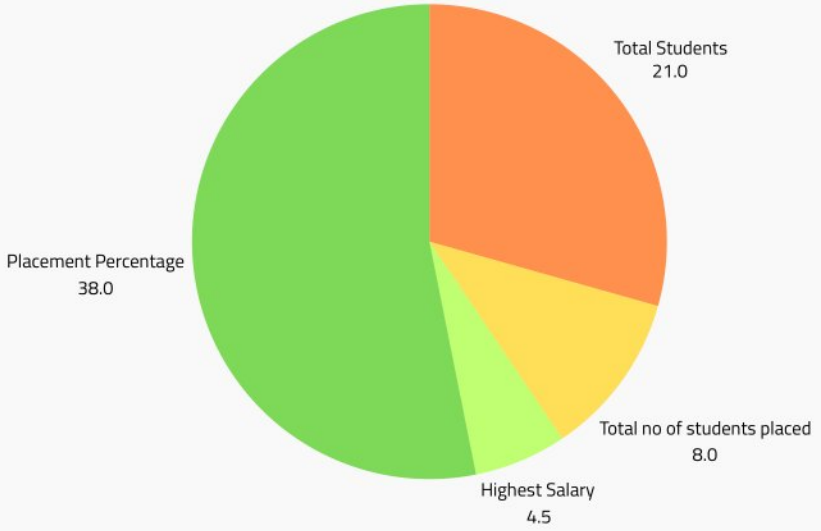
These projects showcase the versatility of Unity in creating engaging AR experiences, whether marker-based or marker less, by blending digital elements with the real world to provide captivating and interactive content.



PLACEMENTS

Assessment Year Name : 2023

Student Name	Employee Name
Archan Hruday Raj	US Technologies
Sahana H B	Employment Express Verband LLP
Aishwarya A P	Bharath Electronics
Neha P	Higher Studies
Sughosh Srihari A S	Vtiger Systems India Pvt.Ltd
Lakshmishree A R	Softtek Solutions
Sukrutha C S	Utthunga Tech
Rathan H M	Magnasoft



PAPER PUBLICATIONS

Sl No	Title of Paper	Author's Name	Journal Name	International/ National	Volume	Issue	Pg.No.	ISBN /ISSN	DOI	Indexing
1	A Study of Machine Learning Effectiveness in Detecting Credit Card Fraud: KNIME	Dr. Arjun B C	Research in Applied Science and Engineering Technology (IJRASET)	International	11	2	1109-1112	2321-9653	https://doi.org/10.22214/ijraset.2023.49213	Google Scholar
2	Performance Analysis by Using the Knime Analytical Platform to Forecast Heart Failure Using Several Machine Learning Methods	Dr. Arjun B C	International Journal for Research in Applied Science and Engineering Technology	International	11	3	205-211	2321-9653	https://doi.org/10.22214/ijraset.2023.49376	Google Scholar
3	Performance Analysis of Regression Algorithms for Used Car Price Prediction: KNIME : Analytics Platform	Dr. Arjun B C	International Journal for Research in Applied Science and Engineering Technology (IJRASET)	International	11	2	1324-1331	2321-9653	https://doi.org/10.22214/ijraset.2023.49180	Google Scholar
4	Chronic Disease Prediction after Covid-19 using Machine Learning	Dr. Arjun B C	Grenze International Journal of Engineering and Technology	International	9	2	33-41	2395-5295	01.GIJET.9.2.404	Scopus
5	Securing the Data using Steganography Technique in Images	Dr. Arjun B C	Grenze International Journal of Engineering and Technology	International	9	2	119-124	2395-5295	01.GIJET.9.2.417	Scopus
6	Real-Time Driver Tiredness Detection using CNN, YOLO, and the Camshift Algorithm	Dr. Arjun B C	Grenze International Journal of Engineering and Technology	International	9	2	467-472	2395-5292	01.GIJET.9.2.470	Scopus
7	A Survey on Deep Learning Methods for Speech Emotion Recognition	Dr. Arjun B C	Grenze International Journal of Engineering and Technology	International	9	2	135-140	2395-5295	01.GIJET.9.2.420	Scopus
8	A Novel encryption with bacterial forging optimization algorithm based pixel selection for video steganography	Dr. Sharath M N	Multi Media Tools and Applications	International	82	16	25197-25216	1573-7721	https://doi.org/10.1007/s11042-023-14420-2	Scopus
9	Development of Automatic Segmentation Techniques using Convolutional Neural Networks to Differentiate Brain Tumors	Dr. Prathibha G	Grenze International Journal of Engineering and Technology	International	9	2	147-153	2395-5295	01.GIJET.9.2.422	Scopus
10	Agriculture Precision: An Efficient-Energy Communication Protcol for WSN	Dr. Prathibha G	Grenze International Journal of Engineering and Technology	International	9	2	23-32	2395-5295	01.GIJET.9.2.403	Scopus

11	Implementing Multi-Factor Authentication for Enhanced Cyber Security in Cloud Storage	Dr. Prathibha G	Grenze International Journal of Engineering and Technology	International	9	2	535-541	2395-5295	02.ACT.2023.14.10	Google Scholar
12	Securing the Data using Steganography Technique in Images	Anil Kumar K N	Grenze International Journal of Engineering and Technology	International	9	2	119-124	2395-5295	01.GIJET.9.2.417	Scopus
13	The Utilization of DenseNet121 for Analyzing and Classification of Leaf Image	Anil Kumar K N	Grenze International Journal of Engineering and Technology	International	9	2	1319-1325	2395-5295	01.GIJET.9.2.400	Scopus
14	Drug Recommendation System based on Sentiment Analysis	Anil Kumar K N	Grenze International Journal of Engineering and Technology	International	9	2	647-654	2395-5295	02.ACT.2023.14.155	Google Scholar
15	Development of Automatic Segmentation Techniques using Convolutional Neural Networks to Differentiate Brain Tumors	Sindhujain A M	Grenze International Journal of Engineering and Technology	International	9	2	147-153	2395-5295	01.GIJET.9.2.422	Scopus
16	Agriculture Precision: An Efficient-Energy Communication Protcol for WSN	Sindhujain A M	Grenze International Journal of Engineering and Technology	International	9	2	23-32	2395-5295	01.GIJET.9.2.403	Scopus
17	Self Driving Simulation of AI-Car using Neural Networks	Sindhujain A M	Grenze International Journal of Engineering and Technology	International	9	2	530-534	2395-5295	02.ACT.2023.14.5	Google Scholar
18	Smart E-Tendering System using Blockchain	Nalini H C	Grenze International Journal of Engineering and Technology	International	9	2	1751-1757	2395-5295	01.GIJET.9.2.451	Scopus
19	Digital Image Watermarking using the Discrete Wavelet Transform(DWT) for Robustness	Nalini H C	Grenze International Journal of Engineering and Technology	International	9	2	1376-1383	2395-5295	01.GIJET.9.2.406	Scopus

STUDENTS' PUBLICATIONS

Name of the Students	Name of the Guide	Title of the Paper	Conference/ Journal	Conference / Journal Name	Volume	Number	Pages	Year
Jyothi D, Gowthami, Lakshmishree A. R, Shrunga H V	Dr. Arjun B C	Real-Time Driver Tiredness Detection using CNN, YOLO, and the Camshift Algorithm	Fourteenth International Conference on Advances in Computing Control, and Telecommunication Technologies - ACT 2023	International Conference on Advances in Computing Control, and Telecommunication Technologies	volume 9 Issue 2	ISBN: 978-81-955890-5-0.	467-472	2022-23
Umme Habeeba, Sajjad Ahmed Dawood Shaikh	Dr. Prathibha G	Implementing multi-factor Authentication for enhanced cyber security in cloud storage	Fourteenth International Conference on Advances in Computing Control, and Telecommunication Technologies -ACT 2023	International Conference on Advances in Computing Control, and Telecommunication Technologies	volume 9 Issue 2	ISBN: 978-81-955890-5-0.	535-541	2022-23
Meghan Gowda T H, Mrinal Bera, Rathan H M, Sughosh Srihari A S	Mr. Anil Kumar K N	Drug Recommendation System based on Sentiment Analysis	Fourteenth International Conference on Advances in Computing Control, and Telecommunication Technologies - ACT 2023	International Conference on Advances in Computing Control, and Telecommunication Technologies	volume 9 Issue 2	ISBN: 978-81-955890-5-0.	647-654	2022-23
Ameena Bee, Bhumika J, Madhura B A, Veerendra Gowda B G	Mrs. Nalini H C	Stroke Prediction using ML	Fourteenth International Conference on Advances in Computing Control, and Telecommunication Technologies - ACT 2023	International Conference on Advances in Computing Control, and Telecommunication Technologies	volume 9 Issue 2	ISBN: 978-81-955890-5-0.	669-674	2022-23
Aishwarya A P, Archan Hruday Raj, Chandan K P, Kruthika T	Ms. Sindhu Jain A M	Self-Driving Simulation of AI-Car using Neural Networks	Fourteenth International Conference onAdvances in Computing Control, and Telecommunication Technologies - ACT 2023	International Conference on Advances in Computing Control, and Telecommunication Technologies	volume 9 Issue 2	ISBN: 978-81-955890-5-0.	530-534	2022-23
Neha P, Sharadhi, Sahana H B, Sukrutha C S	Ms. Gagana Deepa J	Prediction and Analysis of Academic Performance using Multisource, Multifeature Behavioural Data	Fourteenth International Conference on Advances in Computing Control, and Telecommunication Technologies - ACT 2023	International Conference on Advances in Computing Control, and Telecommunication Technologies	volume 9 Issue 2	ISBN: 978-81-955890-5-0.	629-637	2022-23



ACADEMIC EXCELLENCE

VIII Semester (CBCS) Pass out Student (18Scheme)											
NAME	SGPA								TOTAL CGPA	PERCENTAGE	PLACE
	8th	7th	6th	5th	4th	3rd	2nd	1st			
BHUMIKA J	9.83	8.1	8.67	8.44	9.04	8.21	9.00	8.25	8.69	79.43%	1st
SUKRUTHA S	9.83	8.2	8.75	8.16	8.08	7.13	9.00	7.35	8.31	75.63%	2nd
SUGHOS SRIHARI A S	9.83	8.35	8.38	7.7	7.97	7.50	9.50	8.75	8.5	77.54%	3rd

VI Semester (CBCS)- Regular (18Scheme)									
NAME	SGPA						TOTAL CGPA	PERCENTAGE	PLACE
	6th	5th	4th	3rd	2nd	1st			
SACHITH GOWDA M	8.6	8.68	8.17	7.29	9.00	7.50	8.13	73.78%	1st
SANJAY K R	8.44	7.8	8.04	7.79	9.00	7.75	8.08	73.26%	2nd
SPOORTHI H S	8.16	7.72	7.5	8.04	9.00	8.05	8.06	73.12%	3rd

IV Semester (CBCS)- Regular (21Scheme)							
NAME	SGPA				TOTAL CGPA	PERCENTAGE	PLACE
	4th	3rd	2nd	1st			
SHAMBHAVI B V	9.82	9.67	9.7	9.2	9.52	95.24%	1st
KEERTHANA D Y	9.5	8.72	9.3	9.1	9.04	90.39%	2nd
RITHESH B R	9.27	8.9	9.35	9.1	8.96	89.60%	3rd

FACULTY ACHIEVEMENTS

Funded Projects

SL. NO.	Title of the Proposed Project	Faculty Name	Applied Agency	Amount Applied	Applied Date	Status
1	Drug Recommendation System based on Sentiment Analysis Technology after COVID-19.	Mr. Anil Kumar K N	VTU	5,000/-	11-01-2023	Sanctioned
2	Implementing Multi-Factor Authentication for Enhanced Cyber Security in Cloud Storage.	Dr. Prathibha G	VTU	5,000/-	11-01-2023	Sanctioned



Mr. Anil Kumar K N, Asst Professor, Department of Information Science and Engineering, has received **Best Teacher** award for the AY 2022-23 from Rajeev Institute of Technology, Hassan.



Dr. Sharath M N received a patent for his work on **"DEVICE FOR IDENTIFYING OBJECT AT SECURITY GATE"** from the Government of India in the year 2023.



Dr. Prathibha G was awarded a **PhD** from **Visvesvaraya Technological University**, marking a significant achievement in 2023.



Dr. Sharath M N was awarded a **PhD** from DSU in 2023, marking a significant academic accomplishment.

STUDENT ACHIEVEMENTS



Hamsa B C and **Poornima H V** emerged as **State level champions** in volleyball at the competition organized by KIT, Tiptur.



Manasa J achieved the second position in the Fashion Show event at **YUKTHI-2024,** the Regional Level Techno Cultural Fest, hosted by VTU regional office in Mysore.



SAHANA H B

1st Place,
National Dodgeball Championship





Ankith C R and **Akash D**, 7th-sem students of the Department of Information Science and Engineering (ISE), were awarded the **'Consolation - 1'** prize by the **Master Control Facility (ISRO),** Hassan, for their presentation on **"Augmented and Virtual Reality in Space Education"** during "World Space Week."

PROJECT EXHIBITION-BEST PROJECTS				
Sl. No.	Team Members	Mentor Name	Title of the Project	Year
1	• Meghan Gowda T H • Mrinal Bera • Rathan H M • Sughosh Srihari A S	Mr. Anil Kumar K N	"Drug Recommendation System based on Sentiment Analysis Technology after COVID-19"	2022-2023
2	• Sajjad Ahmed Dawood Shaikh • Umme Habeeba	Dr. Prathibha G	"Implementing Multi-Factor Authentication for Enhanced Cyber Security in Cloud Storage"	2022-2023

PROFESSIONAL SOCIETY ACTIVITIES, EVENTS, CONFERENCES

Industrial Visit to Master Control Facility-ISRO, Hassan





92 students of 4th and 6th semester from the Department of Information Science and Engineering embarked on a visit to the **Master Control Facility (MCF)** located in Hassan, Karnataka, on September 7, 2023. MCF, a pivotal center for ISRO's satellite operations, showcased its expertise in satellite monitoring, control, and management. The visit elucidated various aspects of satellite operations including health monitoring, orbit maintenance, eclipse management, and payload testing. The facility's capabilities span from launch support to end-of-life decommissioning, emphasizing its vital role in space asset management. Students gained insights into spacecraft control, mission computer systems, and the intricate network architecture facilitating real-time data distribution. Overall, the visit offered a comprehensive understanding of satellite operations and industry practices, enriching students' knowledge of the space technology domain.

Workshop on "Augmented Reality Development"






The Department of Information Science and Engineering at RIT Hassan organized a 5-day workshop on **Augmented Reality (AR) Development** from October 3rd to October 7th, 2023. Led by Mrs. Haripriya Manne, the workshop covered a wide array of topics including Unity basics, AR scene setup, marker-based AR development, animation techniques, and project building. Participants engaged in hands-on activities, creating projects like a jet engine simulation, city rescue game, maze game, and augmented reality wedding cards. The workshop provided both conceptual knowledge and practical skills in AR/VR technologies, including the use of Unity software for game development. Attendees gained insights into the distinctions between AR and VR, learned to manipulate virtual objects, and explored simulated environments. Overall, the workshop was a resounding success, equipping participants with valuable competencies in Unity3D game development and AR/VR applications.

Internship on "2D & 3D Unity Game development"





The Department of Information Science and Engineering recently organized an internship program on **"2D and 3D Game Development"** using Unity Engine. A total of 81 students from the department of ISE and EEE have actively participated in this hands-on initiative, demonstrating a keen interest in exploring the realms of interactive media. Throughout the internship, students were exposed to various aspects of game development, including Unity basics, scene creation, player movement, obstacle creation, scripting in C#, animations, lighting, and UI design.

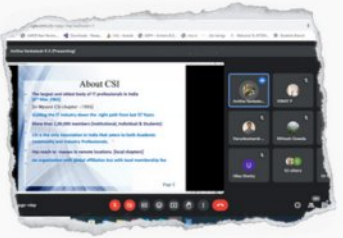
AICTE Activity on "Facilitating 100% Digital Money Transaction"




8th semester students from the Department of Information Science and Engineering (ISE) participated in a **Digital Awareness Program** organized by AICTE from April 20 to April 29, 2023. Held in Bilekal village, Karnataka, the program aimed to educate villagers about digital transactions and payments, including UPI and mobile wallets, through door-to-door surveys and awareness campaigns.

Online Webinar on "Know Your CSI"





The Department of Information Science and Engineering organized an online webinar titled **"Know Your CSI"** on December 6, 2023. The webinar aimed to familiarize students with the Computer Society of India (CSI), emphasizing its role in fostering a community of tech enthusiasts and promoting collaboration in the IT industry. Smt. Anitha Venkatesh, Former State Coordinator of CSI Mysore Chapter, discussed CSI's mission, vision, and structure, highlighting its commitment to promoting IT as a profession and facilitating skill development for professionals. Notably, a significant turnout of 94 students from the 7th and 5th semesters of the Department of ISE actively participated in the webinar, showcasing their eagerness to engage with industry insights and professional networks.

Plantation and Adaptation of a Tree





As part of the Social Connectivity and Responsibility curriculum, third-semester students from the Department of ISE embarked on a visit to **Kamadhenu Ashrama** on December 30, 2023. The objective of the visit was to cultivate environmental stewardship, increase ecological awareness, and encourage sustainable practices among students.

Heritage Walk





The Department of Information Science and Engineering (ISE) organized a **"Heritage Walk"** activity on January 20, 2024, to **Doddagadvalli, Belur, and Halebeedu** as part of the Social Connectivity and Responsibility (SCR) curriculum for the 3rd semester. This initiative aimed to expose students to the rich cultural heritage and historical significance of these locations, fostering a deeper appreciation for their heritage and promoting a sense of responsibility towards preserving it. The "Heritage Walk" offered students an opportunity for experiential learning and cultural exploration, aligning with the department's commitment to holistic education and community engagement.

TECHRITI-2024: Department Technical Function





The Department of CSE, ISE and AIML organized the technical fest **"TECHKRITI - 24"** on January 17th and 18th, 2024, with the objective of fostering technical excellence and innovation. The fest featured competitions like IDEATHON, DESIGN-A-THON, CODE SPRINT, MIND MAZE, ELEVATE-EXPO, and BATTLE-BASH, providing a platform for students to showcase their technical prowess and creativity. Overall, TECHKRITI - 24 was a resounding success, promoting innovation and collaboration among participants.

AICTE Activity: Helping the Local School to achieve good results and enhance their enrollment in the higher education





The Department of Information Science and Engineering organized an event titled **"Helping local schools to achieve good results and enhance their enrollment in higher/technical/vocational education"** as part of an AICTE activity on December 7, 2023, at Government Higher Primary School, Hampankuppe. This initiative, in collaboration with AICTE, aimed to support local schools in improving academic performance and increasing enrollment in higher, technical, and vocational education programs.

Food Walk




The Department of Information Science and Engineering organized a **"Food Walk"** on December 9, 2023, as part of the **Social Connectivity and Responsibility (SCR)** initiative for the 3rd semester students. The event aimed to promote social interaction and community engagement among students. Participants had the opportunity to explore various local eateries and experience different cuisines while fostering bonds with their peers. Overall, the Food Walk provided a platform for students to connect outside of the classroom and strengthen their sense of belonging within the department.

Faculty Development Program on "BLOCKCHAIN TECHNOLOGY"



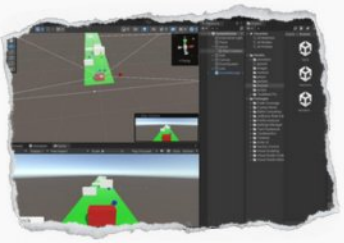


The Department of Information Science and Engineering, in collaboration with CDAC-Hyderabad, conducted a comprehensive 7-day workshop on **"Blockchain Technology"** from March 9 to March 23, 2023. The workshop aimed to equip faculty members from various VTU-affiliated colleges, including Rajeev Institute of Technology, Hassan, with expertise in blockchain technology.

The sessions covered a wide range of topics, including the basics and applications of blockchain, Linux fundamentals, Ethereum, Hyperledger Fabric, Node.js, and MongoDB. Notably, the workshop saw active participation from 11 faculties representing different branches, enhancing their understanding of blockchain concepts and practical implementation techniques.

Internship on “2D & 3D Game Development” for Lateral Entry Students



The Department of Information Science and Engineering (ISE) at Rajeev Institute of Technology hosted an internship program focused on **“2D and 3D Game Development”** using Unity Engine, specifically designed for lateral entry students from the Department of CSE and ISE. Engaging a cohort of 22 students from both departments, the initiative aimed to immerse participants in the exciting realm of interactive media. Over the course of the internship, students delved into diverse facets of game development, spanning from fundamental Unity concepts to advanced topics such as scene creation, player dynamics, obstacle integration, C# scripting, animations, lighting, and UI design. Furthermore, participants ventured into augmented and virtual reality experiences, leveraging Unity to enhance their proficiency in immersive technology applications. The internship curriculum was meticulously crafted to provide hands-on experience in crafting compelling games and applications, aligning with industry standards and contemporary practices. Through individual project endeavors, students exhibited their creativity and technical acumen, showcasing their adeptness in Unity and game development principles. Notably, the program culminated in the successful delivery of impactful projects, underscoring participants' ability to translate their acquired skills into real-world contexts.

Workshop on “Augmented Reality and Virtual Reality”





The Department of Information Science and Engineering recently organized a five-day workshop on **"Augmented Reality and Virtual Reality,"** attracting 29 participants including faculty members and 6th sem students. Led by experienced coordinators and assisted by a dedicated team of assistant professors, the workshop aimed to introduce Unity, a leading software platform for interactive 3D and 2D content creation, with a focus on AR and VR applications. Industry experts from ARK Infosolutions, Bengaluru, and Highbrow Interactive, Chennai, provided valuable insights and hands-on experience to the attendees. Through comprehensive sessions, participants gained essential knowledge and skills in developing AR and VR applications using Unity, enhancing their understanding of underlying technologies and best practices. The interactive nature of the workshop, coupled with practical exercises, enabled attendees to explore Unity software intricacies, including asset importation, scene creation, and game building for various platforms. Overall, the workshop served as a valuable platform for attendees to delve into the realm of AR and VR technologies, fostering innovation in teaching, research, and interactive media development.

FDP on “Cyber Security Essentials”



The Department of Information Science and Engineering, in collaboration with CDAC-Hyderabad, organized a comprehensive 10-day workshop on **"Cyber Security Essentials"** at Rajeev Institute of Technology, Hassan. Facilitated by industry experts, the workshop covered crucial aspects of network security, end system security, and the identification of threats and vulnerabilities in applications. Participants gained practical experience through virtual labs and hands-on training on various security tools, equipping them with essential skills to detect and mitigate cyber threats effectively. Led by Dr. Arjun B C, the valedictory function marked the successful completion of the workshop, with attendees expressing their appreciation for the informative sessions. Notably, all participating faculty members successfully cleared the certification exam, becoming certified trainers in Cyber Security. Among the attendees were Dr. Aravind B N, Shashikala M K, Sanjay M, Megha H C, Sindhu Jain A M, Hajeera Khanam, Ambika K, Vishwanath B R, Rohit P, and Manasa A, representing various departments of VTU-affiliated colleges.

Workshop on “Ethical Hacking and Cyber Security”



The National Information and Cybersecurity Council (NICSC) has been at the forefront of research in the cyber domain, aiming to comprehend the intricate nature of cyber threats and crimes. The Department of Information Science and Engineering at Rajeev Institute of Technology, Hassan, organized a three-day workshop on **"Ethical Hacking and Cybersecurity."** The workshop, inaugurated by **Mr. Prameel Arjun**, CEO of Prikus Group, covered a wide range of topics including networking fundamentals, login bypass techniques, malware detection, and virtualization. Participants engaged in hands-on virtual lab sessions, gaining practical experience in implementing cybersecurity measures. The success of the workshop was underscored by the internship opportunities offered to 18 students based on their performance in the examination conducted by NICC, New Delhi. Overall, the workshop provided invaluable insights into ethical hacking and cybersecurity, equipping attendees with the knowledge and skills necessary to navigate the digital landscape securely.

International Conference on "Advances in Computing, Control, and Telecommunication Technologies-ACT 2023"















The 14th International Conference on **"Advances in Computing, Control, and Telecommunication Technologies – ACT 2023"** organized by the Department of Information Science and Engineering (ISE) was a resounding success, attracting researchers, scientists, engineers, and scholars from various disciplines. Held on June 15th and 16th, 2023, in collaboration with IDES and the Rajeev Institute of Technology, Karnataka, the conference provided a vibrant platform for the exchange of research insights and practical experiences in Computer Science, Control Engineering, Electrical and Electronics, and Telecommunication Technology. With over 205 original research papers submitted and 108 meticulously selected for inclusion, the conference boasted an acceptance rate of approximately 52.68%. Esteemed keynote speakers, including Dr. D S Guru, Dr. H. S. Nagendraswamy, and Dr. Lin Meng, delivered enlightening addresses, setting the tone for engaging discussions and knowledge sharing. Participants had the opportunity to delve into frontier topics, network with industry experts, and gain valuable insights into emerging trends and technologies. The event's success underscored its significance as a catalyst for driving technological innovation and fostering interdisciplinary collaborations in the global research community. In addition to the enriching keynote addresses, the conference featured parallel sessions covering a wide array of topics such as IoT-based solid waste management, deep learning techniques for medical image analysis, and smart energy metering systems integrated with the Internet of Things. These sessions, chaired by distinguished faculty members, provided a platform for in-depth discussions and knowledge exchange among participants. Furthermore, the offline and online sessions offered a diverse range of research presentations, showcasing the latest advancements in fields like artificial intelligence, machine learning, and sustainable technology solutions. The event also included interactive workshops and poster presentations, allowing attendees to explore hands-on applications and innovative research methodologies.

START (Space Science & Technology AwaReness Training) PROGRAM BY ISRO



The **Indian Space Research Organisation (ISRO)** continues to drive advancements in space science and technology through its comprehensive program, covering planetary exploration, astronomy, heliophysics, atmospheric science, and more. Recently, ISRO initiated the **START (Space Technology Awareness and Research)** program to inspire young minds and foster interdisciplinary learning in space-related fields. The program, featuring lectures by esteemed scientists and researchers, aims to raise awareness about space science and technology among students, with the participation of over 70 students from dept. of ISE.

AICTE Activity on "Swatch Bharat"





On April 7, 2023, the 6th-semester students of the Department of Information Science and Engineering (ISE) embarked on a meaningful journey to Kaamadenu Ashrama as part of an AICTE-sponsored activity. A total of 27 students volunteered their time and efforts, actively engaging in activities aimed at assisting the elderly residents and contributing to the Swachh Bharat initiative.

AICTE Activity on "Swatch Bharat"





In a collaborative effort, 4th-semester students from the Department of Information Science and Engineering (ISE) visited Kaamadenu Ashrama to promote the Swachh Bharat mission and environmental awareness.

Industrial Visit to Karnataka Milk Federation (KMF)





7th sem students from Dept. of ISE visited the **Karnataka Milk Federation (KMF)** on February 7th 2023 to gain insights into **food preservation and packaging techniques.** They learned about pasteurization, homogenization, and various packaging materials used by KMF. The visit provided valuable practical knowledge and highlighted KMF's effective approach, which can serve as a model for other food manufacturers.

SNOW LEOPARD

The Snow Leopard, also known as the ounce, is the largest cat native to Central and South Asia, inhabiting alpine and subalpine regions. It is classified as Vulnerable on the IUCN Red List due to threats from poaching and habitat destruction. It is a member of the Panthera genus and was previously classified in the monotypic genus Uncia. There are two described subspecies based on morphology, but genetic differences have not been confirmed, so it is considered a monotypic species. Its global population is estimated to be fewer than 10,000 individuals and is expected to decline by about 10% by 2040.

Snow Leopards are solitary animals that are mostly active at dawn, early morning, and in the afternoon, also known as crepuscular animals. During the day, snow leopards will often rest in caves or rocky outcrops, while at night, they will venture out to hunt.

The snow leopard is a carnivorous and agile predator that actively hunts its prey, preferring wild species such as Himalayan blue sheep, Himalayan thar, argali, marmots, pikas, and voles. It actively pursues prey down steep mountain sides, using the momentum of its initial leap to chase animals for up to 300 meters. It consumes all edible parts of the carcass, and one adult individual needs 20-30 adult blue sheep per year. The snow leopard is capable of killing most animals in its range, except for adult male yaks, and it also eats a significant amount of vegetation. Snow leopards have not been reported to attack humans and are easily driven away from livestock and readily abandon kills.

Snow leopards become sexually mature at 2-3 years and have a well-defined birth peak. They mate in late winter and have a gestation period of 90-100 days, with litters usually consisting of 2-3 cubs. The cubs are born blind and helpless in a rocky den lined with fur and are fully weaned by 10 weeks, leaving the den at around 2-4 months of age. Snow leopards can live for 15-18 years in the wild and up to 25 years in captivity. They have a generation length of eight years.

The main threats to snow leopard populations are poaching and illegal trade of skins and body parts. Skins are used for traditional dress and medicine in Tibet and Mongolia, and a significant number of snow leopards are poached annually in China, Mongolia, India, and Tajikistan.

The snow leopard is listed as threatened with extinction and is protected by law in many countries including Kyrgyzstan, India, Nepal, Russia, Afghanistan, China, and Bhutan. Hunting and trading of snow leopards or their body parts are strictly prohibited and can result in imprisonment, fines, and other penalties.

- Yashwanth Gowda B C
5th sem, ISE



VIRTUAL REALITY: SHAPING TOMORROW'S TECH

In recent times, virtual reality (VR) has emerged as a groundbreaking technology with the potential to revolutionize various industries and reshape our worldly experiences. VR's capacity to construct immersive and interactive environments has captured the imaginations of millions, making it a pivotal force in shaping the future of technology. In this discourse, we'll delve into VR's potential and its implications for tomorrow.

One of the most immediate applications of VR is in entertainment and gaming. As VR headsets become more affordable and accessible, users can delve into virtual realms, enhancing their gaming experiences significantly. The future of gaming will not only entail visually stunning graphics but also heightened presence, offering players a genuine feeling of being part of the game. Advancing technology promises even more realistic environments, haptic feedback, and comprehensive body tracking, further enhancing immersion.

VR stands to transform education and training by offering realistic simulations that transport learners to different historical eras, distant planets, or intricate scientific concepts. This approach makes education more engaging and interactive, with potential benefits across various fields. Moreover, VR offers immersive training experiences for professionals in sectors like medicine, aviation, and the military, providing safe environments for skill refinement and practice.

Virtual reality (VR) offers unparalleled opportunities for exploration and engagement without physical travel, allowing users to experience renowned landmarks and exotic destinations through immersive 360-degree videos and VR tours. This not only enhances accessibility but also supports sustainable tourism by reducing environmental impacts. Moreover, VR revolutionizes communication and collaboration by transcending physical barriers, enabling individuals to meet and interact in virtual spaces as if they were physically present. Advanced features such as realistic avatars and gestures deepen the sense of connection. In healthcare and therapy, VR shows great promise in various applications, including pain management, exposure therapy for anxiety disorders, and medical training, providing realistic simulations in controlled environments for effective treatment and learning.

In conclusion, VR stands as a transformative technology with vast potential across entertainment, education, travel, communication, healthcare, and beyond. As advancements continue, the line between physical and virtual realms will blur, offering even more realistic and immersive experiences. Virtual reality is undoubtedly an exciting frontier, holding the key to unlocking the future of technology.



Dr. Arjun B C
Prof. & HOD, Dept. of ISE

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Surabhi
3rd sem, ISE

THE ROLE OF BIG DATA IN DECISION MAKING



Mrs. Kannikalakshmi D G
Asst. Professor, Dept of ISE

In modern business environments, big data plays a crucial role in guiding decision-making processes across a wide range of industries. Essentially, big data refers to extensive amounts of structured and unstructured data originating from various sources such as social media, sensors, and transaction records. Unlike traditional data, big data is distinguished by its speed, diversity, and sheer volume, often posing challenges for conventional processing tools. Big data analytics equips organizations with the ability to extract valuable insights from massive datasets, facilitating informed decision-making. By conducting real-time analysis, businesses can delve deeper into market trends, customer preferences, and operational efficiency, enabling them to forecast future developments, anticipate fluctuations in demand, and optimize inventory management. Furthermore, big data enables businesses to deliver personalized customer experiences by analyzing individual preferences and purchase histories. For instance, e-commerce giants like Amazon utilize big data to suggest products tailored to users' interests, thereby enhancing overall customer satisfaction.

Additionally, big data analytics plays a vital role in risk management and fraud detection across sectors such as banking and healthcare. Through the monitoring of transactional data, organizations can identify irregularities and address potential threats promptly. Moreover, big data contributes to enhancing operational efficiency by pinpointing inefficiencies, automating tasks, and optimizing resource allocation. Predictive maintenance algorithms, for instance, enable manufacturers to anticipate equipment failures, thus minimizing downtime and boosting productivity. On a strategic level, big data empowers executives to make data-driven decisions by evaluating market trends, competitive intelligence, and internal performance metrics.

However, leveraging big data presents challenges such as data privacy issues, concerns regarding data quality, and shortages of skilled personnel. Organizations need to tackle these obstacles effectively to fully capitalize on the benefits of big data analytics. Furthermore, ethical considerations and adherence to regulatory requirements are crucial for maintaining customer trust and compliance with legal standards. In conclusion, big data emerges as a transformative tool in decision-making, offering unprecedented insights and opportunities for organizations to excel in today's data-centric business landscape. Through strategic planning and investments in technology and talent, businesses can harness the potential of big data to gain a competitive edge and foster sustainable growth.

THE ROLE OF INFORMATION SCIENCE IN SUSTAINABLE DEVELOPMENT

Amid the escalating global challenges of climate change, dwindling resources, and environmental harm, the significance of information science and engineering in propelling sustainable development has reached unprecedented levels. Information science encompasses a broad spectrum of fields, including data analysis, information retrieval, and knowledge management, all of which hold potential for addressing urgent environmental concerns. A notable contribution of information science lies in its capability to gather, process, and interpret extensive datasets concerning climate patterns, the availability of natural resources, and environmental conditions. Utilizing sophisticated data analytics and modeling methods, information scientists can discern trends, patterns, and interconnections that guide evidence-based decision-making in environmental policy and resource management.

Furthermore, information science facilitates efficient communication and dissemination of environmental information to stakeholders, policymakers, and the general public. By harnessing technology platforms such as geographic information systems (GIS), remote sensing, and online databases, researchers can visualize spatial data, monitor real-time environmental changes, and convey their findings to relevant stakeholders. This fosters informed decision-making and encourages public engagement in initiatives aimed at conserving the environment.

Moreover, information science plays a pivotal role in advancing sustainable development by optimizing resource utilization and advocating for circular economy principles. Through the deployment of optimization algorithms, supply chain management systems, and Internet of Things (IoT) technologies, information engineers can develop strategies to minimize waste and maximize resource efficiency, thereby contributing significantly to sustainable development efforts.



Ms. Sindhu Jain A M
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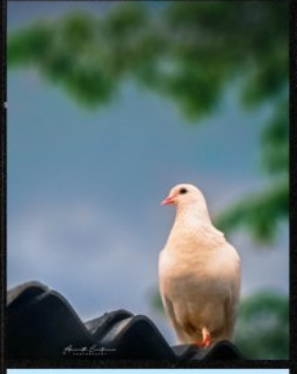





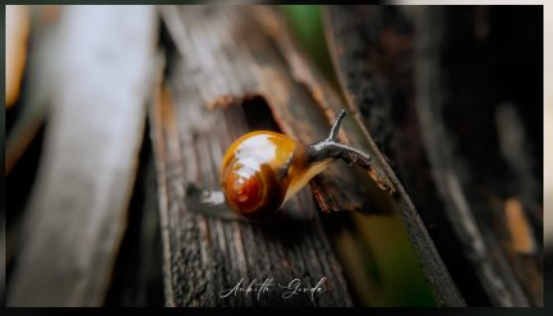



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