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1947 TO 2047

SRI AUROBINDO COLLEGE

DEPARTMENT OF ELECTRONICS

(UNIVERSITY OF DELHI)

presents

CIRCUIT CHRONICLES

FIRST EDITION

2024

True knowledge is not attained by thinking.
It is what you are ,
it is what you become

-Sri Aurobindo

MESSAGE FROM THE PRINCIPAL'S DESK

I would like to congratulate the Department of Electronics on the successful publication of the very first edition of the department magazine "Circuit Chronicles". I am proud of the collaborative efforts of the students and teachers who have contributed for the making up of this magazine.

"Education is the manifestation of the perfection already in man" – this is a very famous quotation of Swami Vivekananda. Sri Aurobindo College cultivates the individuals with strong sense of faith and self-confidence empowering them with creative and analytical abilities. This publication not only highlights the intellectual curiosity but also is a reflection of passion, expertise, artistic expression and creativity that defines Sri Aurobindo Community. The magazine is a comprehensive portrayal of student's academic and personal development, showcasing their talent and knowledge. They have also documented their extracurricular journey that highlights their holistic growth, giving readers a glimpse of student's life in the college premises. Moreover, the readers will get an opportunity to explore the latest advancements in technological innovations and gain valuable insights on faculty research. I also appreciate the contribution of the alumni that has enriched the content of the magazine.

Continuous efforts, commitment and enthusiasm of the students have given them a platform to showcase their talent and share the wealth of knowledge through this publication. So, I encourage the readers to explore Circuit Chronicles and celebrate the academic achievement of the students and the faculty members of Electronics Department.

Sri Aurobindo College is proud of the Department of Electronics on this significant milestone and wish all the best to many more achievements in future.

Prof. Vipin Kumar Aggarwal
(Principal)

FOREWORD

Prof. Vandna Bhalla

TEACHER-IN-CHARGE

It gives me immense pleasure to present to you the much awaited first edition of our magazine titled 'Circuit Chronicles'. A college magazine aims for the holistic development of young minds and reflects the consolidated creative efforts of the teachers and the students. Our aim is to encourage creativity of thoughts amongst students so that they may learn and grow in every aspect. It exhibits the latent talents of the teachers and the students as story tellers, poets, essayists besides their technical knowledge and skills. This inaugural issue has been designed and conceptualised by the students under the very capable leadership of our faculty. In this publication, we offer a wide variety of articles which are contributions by the current students along with the greetings from our alumni. It also provides a glimpse of the activities that we have been engaged in over the last academic year, including publications, seminars, talks, trips and the annual departmental fest.

My sincere appreciation of the hard work undertaken by the Magazine Committee to make it a reality in a meaningful way. My heartiest congratulations to the committee members on their successful effort to bring out the magazine at a very short notice.

I convey words of thanks to Dr. Shubhra Gupta, Dr. Mamta Sharma and Dr. Anita Kumari with their entire editorial team for their efforts. The Editorial and the Creative team of our students have been very forthcoming with their ideas and time, and I extend my thanks to them. Creative brilliance of Satyam Singh and Pitabiva has brought our magazine to life. Happy reading and I hope you enjoy the culmination of our hard work. Do not miss the last part where you will find refreshing brain teasers.

My best wishes to all.

EDITORIAL BOARD

Dr. Shubhra Gupta
Editor-in-Chief

It gives me an immense gratitude to lead the inaugural edition of our Department magazine "Circuit Chronicles-2024". Under the guidance of faculty members, students are able to bring magazine in the present form. The idea behind the magazine is to give readers valuable insights of the year-round departmental activities, students achievements, personalized art forms and the current state-of-the-art R&D and industrial practices. I would also like to make a special mention of the faculty members and the alumni's who have contributed for the compilation of the magazine. Let's delve into its pages to explore its contents.

Dr. Anita Kumari
Co-Editor

It is with great enthusiasm that I introduce the inaugural 2024 issue of Circuit Chronicles, our department's very own magazine. This publication is a testament to the creativity, vision and innovation of our students, providing them with a platform to share their artistic and technical prowess. The dedication and hard work poured into every page are evident, and it's truly inspiring to see our students' ideas and experiences come to life in such a vibrant manner.
As you delve into the pages of Circuit Chronicles, you will find a collection of works that are not only informative but also imbued with hope and inspiration. Each article and artwork are a reflection of the talent that thrives within the Department of Electronics.
Happy reading, and may the Circuit Chronicles be a source of pride and motivation for all involved, now and in the future.

Dr. Mamta Sharma
Co-Editor

Welcome to the electrifying world of Circuit Chronicles! Get ready to be charged up with the latest buzz in electronics. As Benjamin Franklin said, "Energy and persistence conquer all things," and we're here to power your curiosity. Join us in sparking new ideas and exploring the circuits of innovation!

EDITORIAL BOARD

Editorial Team

DEBLINA MANDAL
2nd Year
4th semester

NITI SINGH
2nd Year
4th semester

ASHUTOSH KUMAR PANDEY
2nd Year
4th semester

ADHYAN SAXENA
3rd Year
6th semester

Creative Team

ZEENAT AMAAN
2nd Year
4th semester

SATYAM SINGH
2nd Year
4th semester

PITABIVA BEHERA
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4th semester

SUHANA SATIJA
1st Year
2nd semester

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ABOUT THE DEPARTMENT

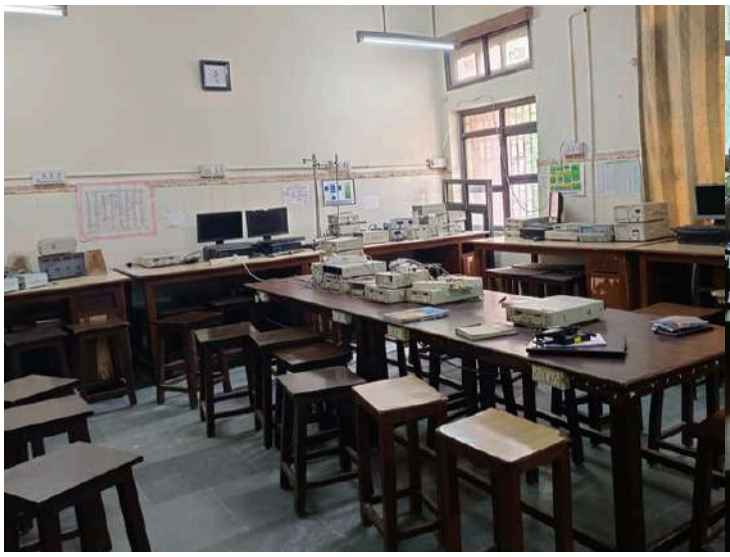
The Department of Electronics at Sri Aurobindo College established in the late eighties, has been a beacon of academic excellence and innovation in the field of electronics. With a robust B.Sc.(Hons) program, the department has consistently aimed to equip students with cutting-edge knowledge and skills, fostering an environment where entrepreneurship and employability are paramount. The department's commitment to offering creative solutions to societal needs reflects its vision to lead in higher education and research.

As a premier institution, the department has embraced the National Education Policy, offering a flexible four-year undergraduate program with multiple exit options, ensuring a broad and adaptable educational experience. Admission through the Common University Entrance Test (CUET) ensures a meritocratic intake, while annual orientation programs introduce new students to the department's rich culture and academic rigor.

With a dedicated team of fifteen staff members, including both teaching and non-teaching professionals, the Department boasts a cadre of highly qualified and experienced educators. These experts guide students through a diverse curriculum that spans the gamut of electronic disciplines, from microprocessors and digital systems to photonics and control systems, preparing them to be the next generation of scientists and researchers. The Department's research interests are vast, extending from the intricacies of nanotechnology to the expansive mysteries of the universe.

Housed on the second floor of the main block, the department's facilities are designed to support both research and practical training. State-of-the-art laboratories, such as the Electronic Devices & Circuits Lab, Microprocessor and Microcontroller Lab, Optical Lab, Computer Lab, and Analog/Digital Communication Lab, provide students with hands-on experience, ensuring that theoretical knowledge is complemented with practical expertise. This holistic approach to education underscores the department's status as a distinguished and forward-thinking entity within the college.

Engaging students with hands-on workshops and training sessions in cutting- edge technologies like microcontrollers, microprocessors, artificial intelligence, machine learning, and embedded systems is a commendable approach to education in electronics. These practical experiences not only align with the current trends but also enhance the students' understanding by applying theoretical knowledge to real-world scenarios. Additionally, educational trips to national laboratories, institutions, and government organizations offer invaluable exposure to professional environments, fostering a deeper appreciation for the field's dynamic nature and potential career paths. Such initiatives are vital in preparing students for the evolving demands of the tech industries.



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ÉLECTRONIQUE SOCIETY

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PRESIDENT
(3rd Year)

DEBLINA MANDAL
VICE - PRESIDENT
(2nd Year)

NITI SINGH
SECRETARY
(2nd Year)

SAKSHI KUMARI
COORDINATOR
(1st Year)

KASHISH GOURI
TREASURER
(3rd Year)

BHEEM SINGH
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(3rd Year)

ISHU GUPTA
CREATIVE HEAD
(2nd Year)

SHAHID
TECHNICAL HEAD
(2nd Year)

SNEHA JHA
EVENT MANAGER
(1st Year)

SUHANA SATIJA
BLOGGER
(1st Year)

ALUMNI SPEAK

I work as a Director, Private Clients with Barclays in India
I used to love attending the classes because the teachers were really very good, knowledgeable and fun to be with.
I did MBA in finance from Lal Bahadur Shastri Institute of Management after graduation

MANISHA SAXENA
1992-95

ASHISH MAAN
2013-17

I am Currently working as director of two companies, Service Ninjas Pvt Ltd & Tecmicra Solutions, and as a board member of a third company Ideax.

Started my career as a product development engineer at a company and then focused on building a company, I believe in enhancing skills, learning new technologies and new techniques. For me every day is an opportunity to learn something new and to improve and have been focusing on progress in both personal and professional life.

I had the most wonderful four years of my life; learnt how to learn and met amazing people not just the classmates but the teachers as well. Two memories that I will never forget, 1 would be getting appreciated by Vandna Ma'am for doing very well in Communication, second would be bunking college with friends.

I work as Director & Co-founder in Service Ninjas Pvt Ltd & Tecmicra Solutions.

After Graduation, I started my entreprenurial journey and have been constantly working towards technological innovation, research and solutions in the field of software development and electronic system designs. I aspire for continuous innovation and development for a greater good.

My college life has been an exciting adventure. I got to make a lot of new friends, learned and honed my skills by constantly working on many exciting projects with the support of all our professors. I strongly believe that all the experiences I had during my college days made me a better person.

Thanks a lot :)

SHUBHAM SRIVASTAVA
2013-17

RAJIV RANJAN
1993-96

I am currently working as a Lecturer in Cyber Security and Programme Leader of UG courses at Department of Cyber Security and Networks at Glasgow Caledonian University, United Kingdom.

Other than teaching UG and PG students, I am also supervising PhD scholars working on various cyber security topics including IoT security and security protocol verification.

I completed my PGDCA from DU and MCA from IGNOU before obtaining Master and PhD. in Cyber Security from University of Birmingham UK.

Before joining GCU, I was working as Associate Professor in Computer Science at Shyam Lal College (Evening) DU.

I pursued my Bachelor's degree in Electronics from Sri Aurobindo College and went on to complete my Master's degree at South Campus. Throughout my undergraduate studies, I consistently ranked as a top performer and in my postgraduate program, I achieved notable distinction. After earning my Master's degree in 1997, I ventured into entrepreneurship alongside my father, focusing on the development and production of EMI/EMC materials such as Microwave Absorbers and Shielding Materials including conductive gaskets and Shielded Anechoic Chambers.

During this time, I played a pivotal role as the project lead in commissioning the first Indigenous Shielded Anechoic Chamber supplied to the Army Centre for Electromagnetics in Mhow, Madhya Pradesh. In 2006, I relocated to Bangalore, transitioning into a role as an EMC simulation engineer at a leading UK-based multinational corporation. However, driven by my passion for hands-on work, I redirected my focus towards hardware and assumed the position of EMC Design Engineer at Dell Inc.

Continuing my trajectory in the field of EMC design, I have contributed my expertise to renowned organizations such as TCS and Juniper Networks before my current role as a Subject Matter Expert for EMC at Cisco Systems. Throughout my career, I have demonstrated my commitment to advancing the field through my participation in various international conferences and presentations at forums such as the IEEE EMC Forum.

JUHI
1992-95

ROBOTICS

The need

The need for robotics stems from the desire to automate tasks that are repetitive, dangerous, or require precision beyond human capabilities. Robotics can help improve efficiency, productivity and safety in various industries by performing tasks with speed, accuracy, and consistency. It is a rapidly growing field with a wide range of applications across various industries such as manufacturing, healthcare, agriculture, and logistics. In manufacturing, robotics can streamline production processes, reduce errors, and increase output. In healthcare, robots can assist in surgeries, patient care and rehabilitation. In agriculture, robots can help with planting, harvesting, and monitoring crops.

Need in healthcare and agriculture

Robotics in the healthcare industry enables high-quality patient care, efficient clinical processes and a safe environment for patients and healthcare workers. The first medical robots, which appeared in the 1980s provided surgical assistance via robotic arm technologies.

By using robots for fertilizer application, farmers can reduce costs and increase yields while also promoting more sustainable farming practices. Additionally, because these robots can operate autonomously, they can work around the clock, which can be especially useful during busy planting or harvesting seasons.

Need in manufacturing

Automated arms execute repetitive tasks flawlessly, reducing human error and labor costs. Sensors enable adaptability, ensuring seamless collaboration between robots and workers. Advanced AI algorithms optimize production schedules, maximizing output and minimizing downtime. Overall, robotics in manufacturing drives productivity and competitiveness in the industry..

Need in logistics

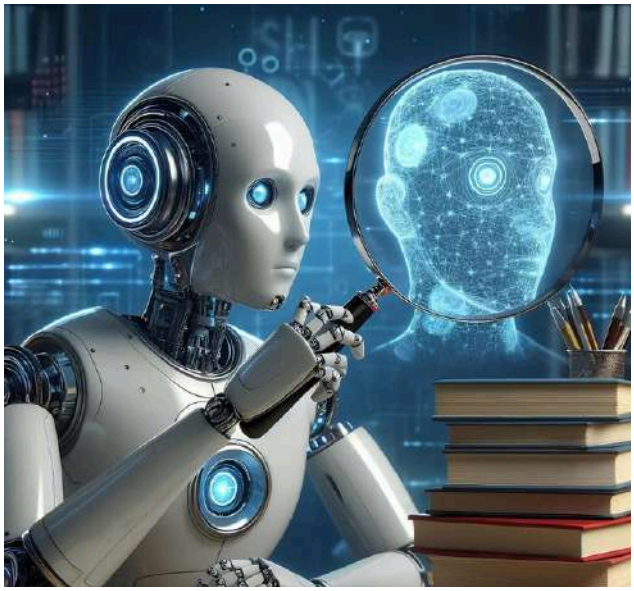
Logistics operations have traditionally been heavy in their reliance on manpower. But with the current complex market dynamics, operational costs and scarce soaring manpower, there is a need to automate logistics now more than ever. To fulfil increasing volumes and sporadic demand, e-commerce and third-party logistics (3PL) players are looking to streamline their logistics operations to make them highly responsive and adaptable. The answer? Flexible and scalable intelligent robotic automation.

Growth in the coming year

The field of robotics is experiencing the significant growth in coming years. Advancements in technology such as artificial intelligence, machine learning, and sensor technology driving innovation in robotics, leading to the development of more sophisticated and capable robots. The global robotics market is projected to expand as more companies invest in automation solutions to stay competitive and meet the demands of a rapidly changing world.

With the increasing demand for automation and the continuous evolution of robotic capabilities, the growth of robotics in the coming years is expected to be substantial.

Future of robotics in India



The integration of artificial intelligence (AI) and machine learning (ML) into industrial robots is another trend that is expected to have a significant impact on the industry. This will allow robots to learn and adapt to changes in the production process, reduce errors, and improve overall efficiency. One major factor is the government's focus on the "Make in India" campaign, which aims to boost domestic manufacturing and create jobs. As part of this initiative, the government has announced several policies and incentives to encourage the adoption of advanced technologies, including industrial robots.

The use of cloud robotics is also set to expand in the Indian manufacturing industry, with more companies adopting this technology to access and analyse large amounts of data, improve decision-making, and optimize their robotic systems. In addition, the growth of modular robots is expected to provide greater flexibility and customization in the manufacturing process, allowing companies to adapt to changes in demand and downtime. Overall, the developments in the Indian manufacturing industry over the coming years will be shaped by the adoption of advanced technologies, including industrial robots. As a result, there will be a growing demand for skilled professionals in fields such as production engineering, data science etc. to help companies optimize the performance of their robotic systems to achieve their production goals.

Reference:- https://en.wikipedia.org/wiki/Robotics

By Prashant Pratap Singh
1st year

GREEN ELECTRONICS

What is green electronics?

In today's digital age, electronics have become an integral part of our daily lives. From smartphones to laptops, televisions to refrigerators, we rely on electronic devices for communication, entertainment, and convenience. However, the rapid pace of technological advancements has resulted in a significant increase in electronic waste, posing a serious threat to the environment. As a result, there is a growing need for Green Electronics. Green electronics, also known as sustainable electronics or eco-friendly electronics, refers to the design, production, and use of electronic devices with minimal environmental impact throughout their lifecycle. This includes considerations such as energy efficiency, reduced use of hazardous materials, recyclability, and responsible disposal.

Need for green electronics

The electronics industry is one of the largest contributors to global e-waste, with millions of tons of discarded devices ending up in landfills each year.

These devices contain hazardous materials such as lead, mercury, and cadmium, which can leach into the soil and water, causing pollution and harm to human health.

Other than this, the need for green electronics arises from several environmental and societal concerns associated with conventional electronic products.

- ***Resource Depletion:*** The electronics industry relies heavily on non-renewable resources such as metals, minerals, and fossil fuels. As demand for electronic devices continues to rise, there is a growing risk of resource depletion and environmental degradation associated with extraction and processing.
- ***Energy Consumption:*** The production and use of electronic devices contribute to energy consumption and greenhouse gas emissions. Green electronics prioritize energy efficiency to reduce electricity consumption during manufacturing, operation, and end-of-life disposal.
- ***Toxic Chemicals:*** Conventional electronics often contain hazardous substances such as lead, mercury, and brominated flame retardants. These chemicals can pose risks to human health and the environment, especially during manufacturing and disposal. Green electronics use non-toxic materials and manufacturing processes to minimize these risks.

Expected growth in the coming years

The market for green electronics is predicted to grow significantly in the upcoming years due to rising consumer demand for eco-friendly products and growing awareness of environmental issues. The global green electronics market is expected to reach USD 245.7 billion by 2028, according to a Grand View Research report. The market is expected to be driven by various factors:

- ***Environmental Awareness:*** The urgency of environmental issues like pollution, resource depletion, and climate change has made consumers more aware of how their purchases will affect the environment. This heightened awareness will increase demand for eco-friendly products.
- ***Government Regulations:*** Stricter laws are being implemented by governments everywhere to address environmental issues in the electronics sector. Manufacturers are frequently required by these regulations to decrease the amount of hazardous materials they use, increase energy efficiency, and support recycling and proper disposal.
- ***Technological Advancements:*** The creation of more environmentally friendly electronic products is made possible by technological advancements. This covers advancements in manufacturing procedures, materials science, and energy-efficient design strategies. As these technologies will become more efficient and cost effective, it leads to the growth of green electronics.
- ***Circular Economy:*** In the electronics sector, the idea of a circular economy—where goods are made to be repaired, reused, and recycled—is gaining traction. Green electronics prioritize durability, repairability, and recyclability, which is in line with the principles of the circular economy. As long as the circular economy will continue to expand, it will also boosts the idea of green electronics.

India's Role in Green Electronics

India plays a significant role in the promotion of green electronics and in the global effort to combat electronic waste and reduce the environmental impact of the electronics industry due to several reasons:

Large Electronics Market: One of the world's biggest and fastest-growing markets for electronics is in India. In order to reduce environmental impact, there is a critical opportunity to promote and adopt green electronics practices to mitigate environmental impact.

Environmental Challenges: Resource depletion, waste management, air and water pollution, and other environmental problems are among the major environmental problems India faces. By embracing green electronics, we address these challenges by reducing energy consumption, minimizing electronic waste, and using non-toxic materials.

Government Initiatives : To encourage sustainability in the electronics sector, the Indian government has launched a number of initiatives and policies. For example, the Ministry of Electronics and Information Technology (MeitY) has launched programs such as the National Policy on Electronics (NPE) and the Electronics Manufacturing Clusters (EMC) scheme to encourage environmentally friendly practices and boost domestic electronics manufacturing.

Customer Awareness : Indian consumers are becoming more conscious of the value of sustainability and environmental issues. Consequently, there is a growing market for environmentally friendly goods.

·**International Commitments** : India is a signatory to international agreements and conventions aimed at addressing environmental issues, such as the Paris Agreement on climate change and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

·**Innovation in Technology**: India's technology industry is flourishing, with a particular emphasis on innovation. Indian businesses and institutions can create innovative technologies and solutions to support green electronics, like eco-friendly materials, energy-efficient components, and sustainable manufacturing processes, by investing in research and development.

·Example of India's contribution towards green electronics :

The Soaring Surge of Solar Panel Production - Powering the Green Revolution: In recent years, the global solar panel production industry has experienced an unpredictable growth. This rise in solar panel production can be attributed to a confluence of factors, including technological advancements, decreasing costs, growing environmental awareness, and supportive government policies.

In conclusion, the global market for green electronics is expanding significantly due to a combination of factors including rising demand for environmentally friendly products, tighter regulations, and technological advancements. India can help create a more sustainable future for all by adopting green electronics practices, which will lessen the electronics industry's environmental impact and mitigate electronic waste.

Reference:
https://onlinelibrary.wiley.com/doi/toc/10.1002/(ISSN)2198-3844.green-electronics

By Adhyan Saxena
3rd year

MACHINE LEARNING

Machine learning is a rapidly growing field of artificial intelligence that enables computers to learn and improve from experience without being explicitly programmed. It has revolutionized various industries and continues to push the boundaries of what is possible with data.

What is Machine Learning?

Definition

Machine learning is the study of algorithms and statistical models that computer systems use to perform a specific task effectively without using explicit instructions, relying on patterns and inference instead.

Types of Learning

The three main types of machine learning are supervised, unsupervised, and reinforcement learning, each with its own unique approach and applications

Key Components

Machine learning systems typically consist of data, algorithms, and models that work together to make predictions or decisions.

Applications of Machine Learning

Predictive Analytics

Machine learning (ML) models can analyze data to make accurate predictions about future events, trends, or customer behavior.

Image and Speech Recognition

Machine learning is widely used in computer vision and natural language processing applications

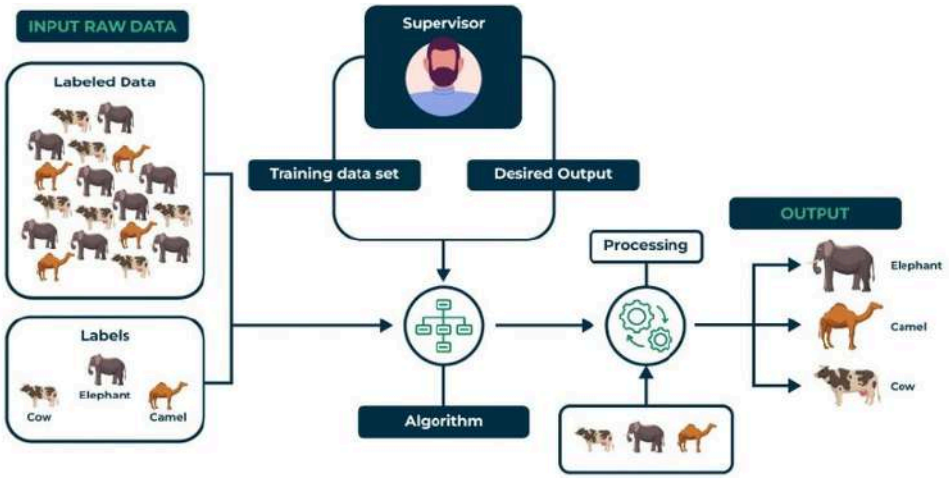
Automated Decision-Making

ML algorithms can help organizations make data-driven decisions and automate repetitive tasks.

Personalization

ML-powered recommendation systems can personalize content, products, and services for individual users.

Supervised Learning



Labeled Data

Supervised learning algorithms are trained on labeled datasets, where the input data is paired with the expected output.

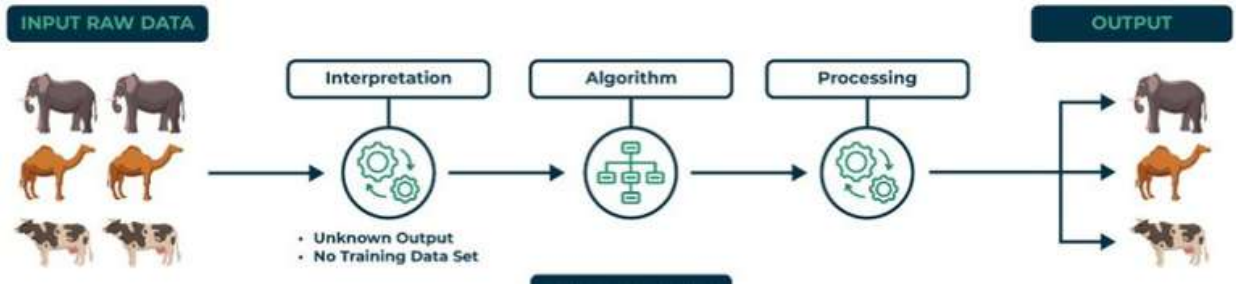
Evaluation and Refinement

The model's performance is evaluated, and the algorithm is tweaked and retrained to improve its accuracy and reliability.

Model Training

The algorithm learns to find patterns in the data and build a model that can make accurate predictions on new, unseen data.

Unsupervised Learning



Unlabeled Data

Unsupervised learning algorithms work with unlabeled data, aiming to uncover hidden patterns and structures within the data

Clustering

One of the most common unsupervised learning techniques is clustering, which groups similar data points together.

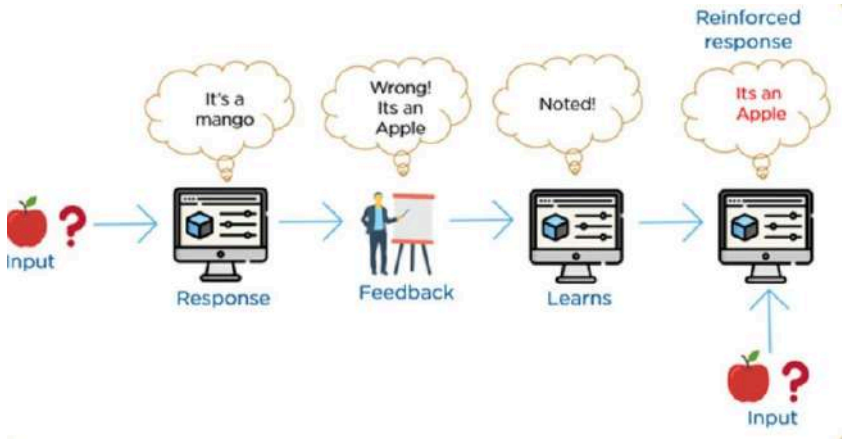
Dimensionality Reduction

Unsupervised learning can also be used to reduce the complexity of high-dimensional data, making it easier to analyze and visualize.

Anomaly Detection

Unsupervised learning algorithms can identify outliers and anomalies in data, which can be useful for fraud detection and system monitoring.

Reinforcement Learning



Agent-Environment Interaction

Reinforcement learning involves an agent interacting with an environment, taking actions, and receiving rewards or penalties based on the outcomes.

Trial and Error

The agent learns by trial and error, gradually optimizing its behavior to maximize the cumulative reward.

Autonomous Decision-Making

Reinforcement learning is particularly useful for complex, dynamic environments where the optimal actions are not known in advance.

Challenges and Limitations of Machine Learning

Data Quality

Ensuring the accuracy, completeness, and relevance of training data is crucial for ML models to perform well.

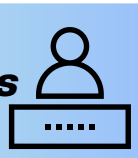
Interpretability

Many ML models are "black boxes," making it challenging to understand and explain their decision-making process.

Scalability

As the volume and complexity of data increase, scaling ML models to handle large-scale problems can be a significant challenge.

Bias and Fairness



ML models can perpetuate and amplify biases present in the training data, leading to unfair or discriminatory outcomes.

Conclusion and Future Trends

Continued Advancements

Machine learning is expected to make significant advancements in areas such as natural language processing, computer vision, and autonomous systems.

Ethical Considerations

As Machine Learning becomes increasingly integrated into our daily lives, there will be a growing focus on ensuring its ethical and responsible development and deployment.

Hybrid Approaches

The future of machine learning may involve the integration of different learning paradigms, combining the strengths of supervised, unsupervised, and reinforcement learning.

Democratization of ML

The continued development of user-friendly ML tools and platforms will make it more accessible to a wider range of industries and individuals.

Reference: https://www.ibm.com/topics/machine-learning

By Ashutosh Kumar Pandey
2nd year

SEMICONDUCTORS

The Foundation of the Digital Revolution

Semiconductors are the fundamental building blocks of modern electronics. These remarkable materials have transformed the world, enabling the development of countless innovations that have revolutionized our lives. From the ubiquitous smartphones to the advanced medical devices, semiconductors are the backbone of the digital age.

The Remarkable History of Semiconductors

1947: The Birth of the Transistor

The invention of the transistor by John Bardeen, Walter Brattain, and William Shockley at Bell Labs revolutionized the world of electronics, paving the way for the digital revolution.

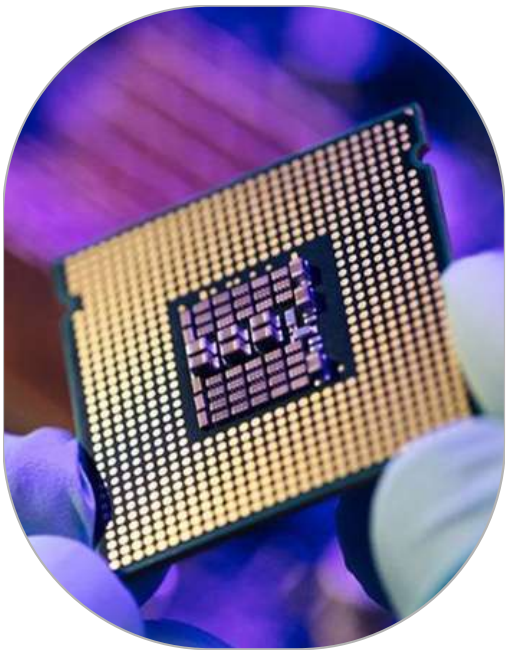
1958: The Integrated Circuit

The integrated circuit, developed by Jack Kilby at Texas Instruments, allowed for the miniaturization and integration of electronic components, enabling the creation of more powerful and compact devices.

1971: The Microprocessor

The introduction of the Intel 4004, the first commercially available microprocessor, marked a significant milestone in the history of semiconductors, leading to the development of personal computers and a wide range of digital devices.

Semiconductor Technology: Powering the Future



Advancements in Chip Design

Innovations in semiconductor design, such as the use of FinFET transistors and the adoption of 3D chip architectures, have enabled the continued scaling of transistors, leading to more powerful and energy-efficient devices.

Breakthroughs in Materials

The exploration of new semiconductor materials, including wide-bandgap semiconductors like silicon carbide and gallium nitride, has opened up new possibilities for high-power, high-frequency, and high-efficiency applications.

Advancements in Manufacturing

Improvements in semiconductor manufacturing processes, such as the use of extreme ultraviolet (EUV) lithography and advanced packaging techniques, have enabled the production of smaller, faster, and more reliable chips.

The Pivotal Role of Semiconductors in Modern Electronics

Powering Smartphones and Tablets

Semiconductors are the heart of our mobile devices, enabling the processing power, connectivity, and advanced features that we rely on every day.

Driving the Internet of Things (IoT)

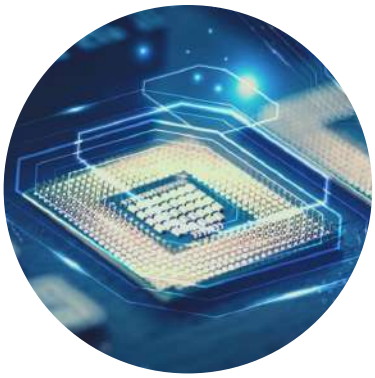
Semiconductors are the foundation of the IoT, connecting a vast array of devices and enabling the collection and analysis of data for a more intelligent and interconnected world.

Revolutionizing Automotive Technology

Semiconductors are crucial for advanced driver-assistance systems (ADAS), electric vehicles, and autonomous driving, transforming the automotive industry.

Enhancing Medical Devices

Semiconductors play a vital role in the development of innovative medical technologies, from imaging systems to implantable devices, improving patient care and outcomes.



India's Semiconductor Industry: Current Landscape

Emerging Semiconductor Design Hubs

India is home to several major semiconductor design centers, with companies like Intel, Qualcomm, and Samsung establishing a strong presence in the country.

Chip Manufacturing Potential

While India has a limited semiconductor manufacturing capacity, the government is actively working to attract investments and establish a robust domestic chip fabrication industry.

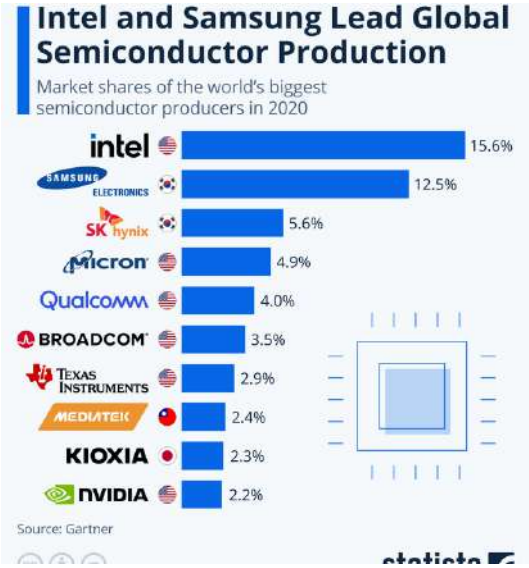
Talent Pool and R&D Ecosystem

India boasts a large talent pool of skilled engineers and researchers, along with a vibrant ecosystem of startups and academic institutions working on semiconductor innovations.

Policy Initiatives and Incentives

The Indian government has launched several initiatives, such as the Semiconductor Mission, to support the growth of the domestic semiconductor industry and attract global investments.

India's Potential in the Global Semiconductor Market



Burgeoning Domestic Demand

India's rapidly growing consumer electronics and automotive sectors are driving an increasing demand for semiconductors, providing a significant opportunity for the country to meet its own needs and potentially become a global exporter.

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Fostering Innovation and R&D

By nurturing its vibrant startup ecosystem and strengthening its research and development capabilities, India can drive innovations in semiconductor design and technology, contributing to the global semiconductor industry's progress

Expanding Manufacturing Capabilities

With the right policy support and investments, India can leverage its skilled workforce and emerging semiconductor ecosystem to establish a robust chip manufacturing industry, positioning itself as a global hub for semiconductor production.

Challenges and Opportunities for India's Semiconductor Sector

Infrastructure Challenges

Addressing the need for reliable power, water, and transportation infrastructure is crucial for establishing a thriving semiconductor manufacturing ecosystem in India.

Policy and Regulatory Frameworks

Streamlining regulations, providing incentives, and fostering a business-friendly environment can attract global semiconductor companies to invest in India.

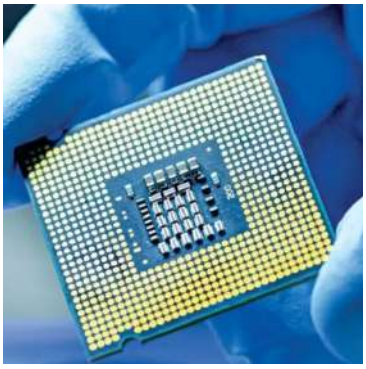
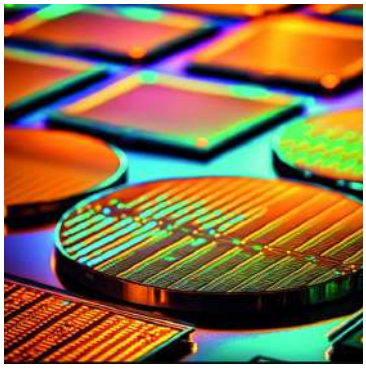
Talent Development

Investing in STEM education and upskilling programs can help India build a robust talent pipeline to support its semiconductor industry's growth.

Strengthening the Supply Chain

Developing a comprehensive semiconductor supply chain, from raw materials to equipment and services, can enhance India's competitiveness in the global market.

The Future of Semiconductors and India's Pivotal Role


Technological Advancements

Continued miniaturization, energy efficiency, and integration of semiconductor devices will drive the development of more powerful and intelligent electronics.

Emerging Applications

Semiconductors will play a crucial role in powering emerging technologies like artificial intelligence, quantum computing, and advanced wireless communication.

Global Semiconductor Demand

The global demand for semiconductors is expected to grow exponentially, driven by the increasing adoption of connected devices, electric vehicles, and advanced industrial automation.

India's Semiconductor Ambitions

With the right policy support, investments, and ecosystem development, India can establish itself as a global semiconductor manufacturing and design hub, contributing to the industry's future growth.

Reference: https://gamma.app/docs/Untitled-5cbjnii1enmoog6

By Niti Singh
2nd year

ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI) is the field of computer science that aims to create intelligent machines capable of performing tasks that typically require human intelligence, such as learning, problem-solving, and decision making.

History and Evolution of AI

The Birth of AI
The concept of artificial intelligence was first proposed in 1950s by pioneering researchers like Alan Turing and John McCarthy

Early AI programs
The early days of AI, marked by the first successes in Chess and Checkers programs.
One notable example is the LOGIC THEORIST, created by Allen Newell and Herbert A. Simon

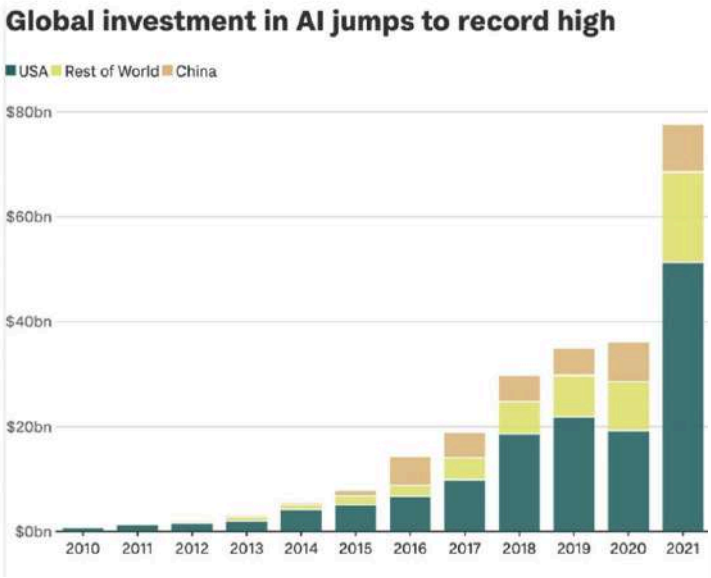
1970s-1980s
The "AI Winter" - a period of reduced funding and interest due to limitations in the technology.
Another example is MYCIN, a system for diagonising bacterial infections

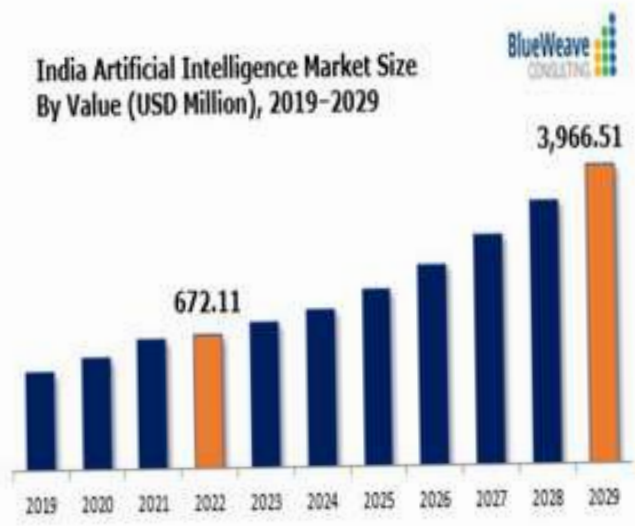
Resurgence (1990s-2000s)
Resurgence of AI with advancements in machine learning and the rise of Neural Networks.Examples include IBM's Watson, which famously won Jeopardy! in 2011, and AlphaGo, developed by DeepMind, which defeated the world champion Go player in 2016.

Fundamental Techniques

Machine Learning
Algorithms that enable systems to learn and improve from experience without being explicitly programmed.
Example- Netflix or Amazon
Neural Networks
Interconnected nodes, inspired by the human brain, that can learn to perform tasks by processing data.
Example-Facial recognition
Natural Language Processing
Techniques that allow computers to analyze, understand, and generate human language.
Example- Alexa

Investment Trends





Applications of AI in Various Industries

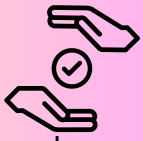
AI integrated chips: Tesla being a tech pioneer has become a leading name in the world of electric vehicles.Tesla aims to create AI integrated chips that will enable cars to navigate through freeways and even traffic. Approximately 6 billion transistors constitute the circuit of each Tesla chip.

Mind mapping: AI can help transform thoughts into structured mind maps or spark innovative ideas in brainstorming sessions, finding unique connections and insights that human eyes might overlook.

Elon Musk's AI Brain -Chip company Neuralink has embedded the first computer chip in a human brain, marking a major milestone in neuroscience

Ethical Considerations and Challenges

Bias and Fairnes



Ensuring AI systems do not perpetuate societal biases and treat all individuals fairly.

Transparency Accountability

Developing AI systems that are transparent and accountable for their decisions and actions.

Privacy and Security

Addressing concerns about data privacy and the potential misuse of AI technology.

Job Displacement

Mitigating the impact of AI-driven automation on employment and the workforce.

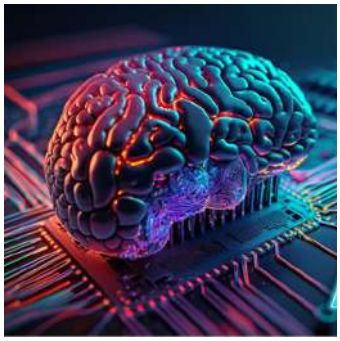
Security Risks

AI systems can be vulnerable to attacks and manipulation, posing risks to cybersecurity, infrastructure, and even democratic processes if deployed maliciously or exploited by bad actors.

Social impacts

The widespread adoption of AI technologies may reshape social dynamics, relationships, and human behavior, raising questions about societal norms, values, and the overall well-being of communities.

The Future of AI and Emerging Trends



Artificial General Intelligence

The development of AI systems with human-level intelligence and the ability to adapt to any task.

Quantum Computing

The integration of quantum computing to unlock new possibilities for AI and data processing.

Ethical AI Governance

The establishment of frameworks and policies to ensure the responsible development and deployment of AI.

RABBIT'S LAM-POWERED DEVICE R1 ARRIVES

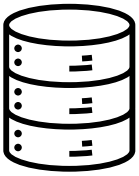
Consumers finally got their hands on Rabbit's large action model (LAM) based device R1, which takes AI to the next level. Beyond simply answering queries, it can take actions like booking you a cab, ordering food, etc, at your command. It can understand audio and identify what it sees through the camera. The $199 pocket-sized device is, however, not yet available in India.

MICROSOFT LAUNCHES LIGHTWEIGHT AI MODEL

PHI-3-MINI Phi-3-mini is the first of three small language models (SLM) to be released by the software major as it looks to broaden its client base with cost-effective solutions. The model will be available on Microsoft Azure's AI model catalogue, machine learning model platform Hugging Face, Nvidia's software tool Nvidia Inference Microservices and Ollama - a framework for running models on a local machine.

"Phi-3 is not slightly cheaper, it's dramatically cheaper. We are talking about a 10x cost difference compared to the other models out there with similar capabilities," said Sebastien Bubeck, Microsoft's vice- president of GenAI research.

Limitations and Drawbacks of AI



Data Dependency

AI systems require large amounts of high-quality data to train and perform effectively.

Lack of Common Sense

AI can struggle with tasks that require human-like reasoning and understanding of the world

Black Box Problem

The inability to fully explain the decision-making process of complex AI models

The potential for AI systems to be misused or cause unintended harm if not properly designed and implemented.

Conclusion and Key Takeaways

Transformative Potential
AI has the power to revolutionize industries and transform how we live and work.

Ethical Considerations
Responsible development and deployment of AI is crucial to address societal concerns.

Continuous Innovation
The field of AI is rapidly evolving, with new breakthroughs and emerging trends on the horizon.

Collaboration and Coexistence
The future of AI lies in its ability to complement and enhance human intelligence, not replace it.

Reference: https://gamma.app/docs/Untitled-mynghóvsaukj0pf

By Deblina Mandal
2nd year

FACULTY ACHIEVEMENTS

Dr. Vandna Bhalla, Associate Professor, Department of Electronics, Sri Aurobindo College, Delhi University was promoted to Professor Vandna Bhalla in April 2023

Dr. Shubhra Gupta and Dr. Himanshu Kushwah were awarded Doctoral Degree in the convocation held at University of Delhi Conference Hall on 24th February, 2024.

Publications

1. Title- "**Future applications of Graphene: The Exceptional Material "**
Author list- **Dr.Vandna Bhalla, Dr. Anita Kumari**
International Journal Of Education, Modern Management, Applied Science & Social Science(IJEMMASSS) ,Volume 05, No. 01 (III), 2023, ISSN : 2581-9925,https://www.inspirajournals.com/uploads/Issues/1103750565.pdf

2. Title- **Extraordinary properties of Graphene: What makes it so powerful?**
Author list -**Dr. Anita Kumari. Dr Vandna Bhalla**
European Chemical Bulletin 2023, 12(Special Issue 4), 2486-2497, ISSN: 2063-5346. https://www.eurchembull.com/uploads/paper/b1ee1ad72a1ebc48ee8ac92fedd032a1.pdf

3. Title-**Biosensors based on ZnO Nanostructures and their role in Health Diagnosis: A Review**
Author List- **Dr.Mamta Sharma, Dr. Susheel Kumar Singh, Dr.Vandna Bhalla**
European Chemical Bulletin 2023, Volume 12, Issue 4,4152-4166,doi-10.48047/ecb/2023.12.si4.352

4. Title- **Nanotools of ZnO Nanostructures offered by Nanotechnology for Sustainable Farming**
Author- **Dr. Mamta Sharma, Dr. Vandna Bhalla**
Volume 11 Issue V May 2023- Available at www.ijraset.com, ISSN: 2321-9653,
DOI- https://doi.org/10.22214/ijraset.2023.52446

5. Title- **A Review on Neural Approaches in Image Processing Applications**
Authorship- **Dr. Vandna Bhalla**
International Journal for Research in Applied Science & Engineering Technology (IJRASET) 2023, Volume 11, Issue IV, April, 50-68, ISSN 2321-9653, https://doi.org/10.22214/ijraset.2023.49851

6.Title- **Contribution of Tribal Women in Development of Sustainable Environment**
Authorship-Dr. Vandna Bhalla, Prof. Meeta Mathur
International Journal of Science and Engineering Development research (IJSDR) 2023, Volume 8 Issue 4 April, 2331-2334, ISSN 2455-2631, https://www.ijsdr.org/viewpaperforall.php?paper=IJSDR2304362

7.Title- **The 5G Technology: Concepts, Benefits and Concerns**
Authorship- Dr. Vandna Bhalla, Dr. Rinki Sharma, Mrs. Pratibha Gupta, Dr. Rashmi Mathur
Journal of Data Acquisition and Processing (JDAP)2023, Volume 38 Issue 2 April, 3800-3811,ISSN 1004-9037, https://sjcjycl.cn/article/view-2023/02_3800.php

8. Title- **5 Ways to Become a SMART User of Smart Devices**
Authorship- Dr. Vandna Bhalla, Mrs. Pratibha Gupta
Journel name-International Journal of Innovations and research Analysis (IJIRA)2023, Volume 03, No.02(I) April-June,09-18,ISSN (Online): 2583-0295, https://inspirajournals.com/IJIRA2.

STUDENT ACHIEVEMENTS

Priyank Tomar
3rd Year

Utasav Ekta Ka
Institute of home economics delhi university
1st position

Tanmay Jain
1st year

1st position in photography competition
at Delhi College of Arts and Commerce (DCAC)

Miss fresher 2023-24

Sakshi Kumari
1st Year

The commerce society
Sri Aurobindo College (evening)
Pitch Desk Competition
2nd Position

Business Plan competition
Indira Gandhi Delhi technical University of women
2nd position

SRI AUROBINDO COLLEGE
(UNIVERSITY OF DELHI)

Certificate of Merit

This is to certify that Ms./Mr. Shalini Priya
has secured I position among the successful students who
appeared for 1st/2nd/3rd year of B.Sc. (H) ELECTRONICS SCIENCE
course of University of Delhi in the academic session 2022-23

Convener

Principal

Merit Holder
Shalini Priya
3rd year

Merit Holder
Ankit
3rd year

POSITION HOLDER

Name	Year	Position
Deblina Mandal	1st	I
Pitabiva Behera	1st	II
Shalini Priya	2nd	I
Ankit	2nd	II
Jaya Chauhan	3rd	I
Nitin Adhikari	3rd	II

DEPARTMENT ACTIVITIES

Academic Session 2023-24

Annual Fest Electrowiz on 10th April, 2024

Electrowiz was a captivating event, highlighted by the presence of our esteemed Chief Guest, SK Marwaha, Group Coordinator & Scientist G(MEITY). Mr. Marwaha delivered an insightful talk on the growth of the electronics and semiconductor industries in India, shedding light on the associated challenges and opportunities. The event was further enriched with engaging activities such as a quiz competition, a thrilling treasure hunt, keeping the participants entertained and intellectually stimulated. Additionally, there was a hands-on circuit activity that provided a practical learning experience, making the event not only informative but also interactive and enjoyable for everyone involved. Also, the Electrowiz fest featured a thrilling coding battle in which participants showcased their programming skills and creativity to solve the given coding problem. Overall it was a great success.

Cyber Security on 2nd February, 2024

The talk on cyber security was delivered by a renowned expert Dr. Rakshit Tandon. The event witnessed the participation of over 60 students and around 10 faculty members. During the session Dr. Tandon addressed the students and made them aware of the various repercussions of not having cyber hygiene.

The students and faculty members got motivated towards a better usage of the cyber world. It was indeed a very active, lively, and engaging talk.

Educational trip to 31st Convergence India Expo on 19th January, 2024. Around 15 students under the supervision of one faculty member went to the Expo held at Pragati Maidan in New Delhi showcasing India's advancements in technology and industry as the country's largest exhibition of its kind.

It was an exciting and an informative experience for students. The expo showcases numerous innovative technologies for students and teachers, where students learn about different new innovative ideas and start-ups.

Educational trip to CSIR-NPL on 4th October 2023.

The laboratory offered guided tours for students and teachers, where they learned about different areas of research and interacted with scientists and researchers. Upon arrival, they were greeted by knowledgeable and friendly staff who guided them throughout the tour. Around 60 students from I, II and III year BSc(H) Electronics participated in the trip under the supervision of two faculty member

Orientation Program-2023

Orientation Program for the newly admitted students on **16th August, 2023** in Electronics Laboratory. The department offers degree in B.Sc (H) Electronics. It is a four-year course with exit options in all the years. The students are admitted to the program via a Common Seat Allocation System (CSAS). They must take the Common University Entrance Test (CUET) for getting admission to this program. For getting admission in B.Sc. (H) Electronics, they must appear in Physics, Mathematics and Chemistry/Computer Science. More than 30 students have secured admission this year.

उसको नहीं भुलाना

आते जाते सोते जगते,
उसको नही भुलाना।
सुख मे दुख में हर्ष शोक में,
भ्रमित नही हो जाना ।।

जग से कितना ही लगाव हो, संग ना कुछ जा पाये,
पत्नि पुत्र मित्र गुरु शिष्य, सभी यही रह जाये,
मात्र अकेले ही चलना है
तन भी तज कर जाना,

आते जाते सोते जागते.....
धन भवन भूमि सम्पत्ति, किंचित भी साथ न देगें।
प्राणों से भी प्रिय जन, मरघट तक संग चलेंगें ॥
मोह में फस कर सदा-सदा को,दुख ही दुख उठाना,

आते जाते सोते जागते.....
निज कर्मो का सारा फल तो,कष्टों में क्यो रोना,
शाश्वत नियम नियति का है ,जो पाया वह खोना,
सुख दुख सदा कोई नही रहता, परिवर्तन तो आना,

आते जाते सोते जगते....
मधुर-२ ही फल चाहते हो ,तो कटु को कौन चखेगा,
जीवन की इस धूप छाँव मे,कटु भी अवश्य मिलेगा।
फल कर्मो की कर्म कामना, करवाती है नाना, ।।

आते जाते सोते जगते, उसको नही भूलाना,
सुख में दुख में हर्ष शोक में भ्रमित नही हो जाना

- डॉ हिमांशु कुशवाह

माँ

लबों पर उसके कभी बद्दुआ नही होती!
बस एक मां है जो कभी खफा नही होती!
अभी जिंदा है मेरी मां मुझे कुछ नही होगा।
मैं घर से जब निकलता हूं दुआ भी साथ चलती है।
हुआ है तुझ से बिछड़ने के बाद यह मालूम।
कि तू नही तेरे साथ एक दुनिया थी।
आशाएशो की गोद में यह हासिल नही हुआ।
पाया था सुकून जो मां के गोद में।
एक मुद्दत मेरी माँ सोई नही तबिश।
मैंने एक बार कहा था मुझे डर लगता है।
सख्त रातों में भी आसान सफर लगता है।
यह मेरी माँ की दुआओं का असर लगता है।
वह अक्सर ख्वाब में आकर मेरी हालत पर रोती है।
कि मेरे खाक भी माँ की परेशानी नही जानती।
पर क्या लगे कि घोंसलें से उड़ गई सभी।
वह फिर अकेली रह गई बच्चों को पालकर।
तुने तो रुला के रख दिया है जिंदगी।
जाके पूछ मेरी माँ से कितने लाड़ले थे हम।
गोद से गौर तक हर बात सिखाती है माँ।
हर रोज़ एक नया लफ्ज़ बताती है माँ।
ज़िंदगी के सफर में गर्दिशों के धूप में।
जब साया कोई नही मिलती तो याद आती है माँ।

तौफीकअहमद
प्रथम वर्ष

शिक्षक

शिक्षक
एक ऐसा व्यक्ति जो हमेशा हमारे साथ रहता है ,
शिक्षक
जिनकी डांट में हमारे लिए प्यार छिपा होता है,
शिक्षक
जो अपनी डांट में भी हमें वो सब समझा देते हैं,
जो किताबी ज्ञान हमें कभी नही समझा सकता,
शिक्षक
जिनकी डांट, भले ही हमें पसंद न हो,
कभी-कभी हमें सही रास्ता दिखा देती है,
शिक्षक
जो हमें सही इंसान बनाते हैं,
जो हमें सही और गलत में फर्क करना सिखाते हैं,
शिक्षक
जो हमें जीवन के अंधेरे में रोशनी दिखाते हैं,
अगर बंद हो जाये सब दरवाजे
तो वो हमें नई राह दिखाते हैं,
वो हमें सिर्फ़ किताबी ज्ञान ही नही बल्कि जीवन जीना भी सिखाते हैं |

सुहाना सतीजा
प्रथम वर्ष

ज़िंदगी का सार

जीवन का सार, अनमोल विचार,
हर पल एक नया सफर।

खुशियों का संग, दुःखों की रंग,
हर मोड़ पे है एक सीख।

सपनों का साथ, मुश्किलों का हाथ,
हर मुश्किल को आसान बनाए।

समय की पहचान, जीवन का महत्व,
बिता हुआ क्यों नही लौट सकता।

उठो और चलो, ख्वाबों की ओर,
जीतो हर पल, बनो अपनी मिसाल।

जीवन का सार, यही है सत्य,
जियो खुल के, बस यही मन्त्र सर्वदा।

-मानसी यादव
प्रथम वर्ष

क्षत्रिय

वचन के खातिर प्राण लूटा दी,
धर्म के खातिर शीश कटा दी।

मातृ भूमि की रक्षा खातिर,
जो बिना शीश लड़े।

इतिहासों में चर्चे है,
हमारी लिखी गौरव गाथा के।

धर्म शास्त्र कहते है,
क्षत्रिय दूत विधाता के।

चंद्रगुप्त का शौर्य लिए,
चाणक्य का क्रोध है हम।

चमक तेज तलवारों सी,
शत्रु का अवरोध है हम।

जिसने विश्व शांति का उपदेश दिया,
वो महात्मा बुद्ध है हम।

अखंड भारत के निर्माता भी
विजेता कलिंग युद्ध भी हम।

मार दिया जिसने गौरी को,
वो पृथ्वी राज खिलाड़ी है।

नही झुका अकबर के आगे,
वो महाराणा मेवाड़ी है।

गौरवशाली इतिहासों के,
असली वरिसदार है हम।

जिसने त्याग और बलिदान दिया,
उनके योद्धाओं के कर्जदार है हम।

इतिहास चुराए नही है
हमने इतिहास बनाए है।

लाखो शीश कटे है रण में,
तब क्षत्रिय कहलाए है।

- सत्यम् सिंह कुशवाहा
द्वितीय वर्ष

Interesting facts that will make you OMG!

The first electronic computer, ENIAC (Electronic Numerical Integrator and Computer), weighed over 27 tons and occupied about 1,800 square feet of space.

The term "bug" to describe a computer glitch originated in 1947 when a moth caused a malfunction in the Mark II computer at Harvard University.

The QWERTY keyboard layout was designed in the 1870s to prevent typewriter jams by placing commonly used letter pairs far apart from each other.

The first electronic digital watch, made by Hamilton Watch Company in 1972, was the Pulsar P1. It cost $2,100.

The concept of a computer virus was first introduced by John von Neumann in the 1940s

The first webcam was used at Cambridge University to monitor a coffee pot, letting people know if the pot was empty or full.

The "@ symbol" was first used in email addresses in 1971 by computer programmer Ray Tomlinson

The first computer mouse was made of wood.

The Apollo 11 guidance computer that landed humans on the moon had less processing power than a modern smartphone.

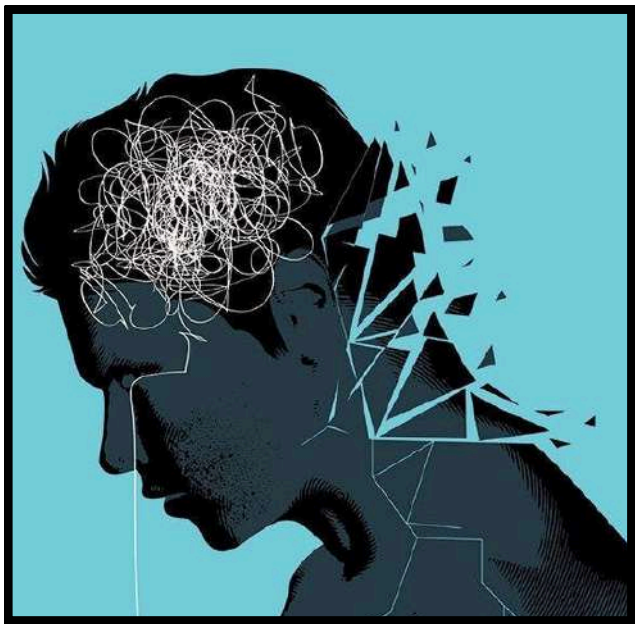
Reference-https://www.linkedin.com/pulse/10-interesting-facts-computers-discover-what-you-dont-7m86cs

By Mansi Yadav
1st year

Navigating Mental Health Resources: A Comprehensive Guide for Students

In today's fast-paced academic environment, prioritizing mental health is paramount for students. Navigating the vast array of mental health resources available on campus can be daunting, but understanding the options and knowing where to turn for support is crucial for overall well-being.

Firstly, most colleges offer counselling services, providing confidential support from trained professionals. Whether dealing with stress, anxiety, depression, or relationship issues, students can schedule appointments to discuss their concerns in a safe and supportive environment.



Additionally, many campuses host mental health awareness events, workshops, and support groups. These initiatives foster a sense of community, reduce stigma, and provide valuable resources for students seeking peer support.
For those in need of immediate assistance, hotlines and crisis intervention services are available 24/7. These resources offer confidential support, crisis intervention, and guidance for students in distress.

Furthermore, students can explore online resources such as mental health apps, informative websites, and self-help tools. These platforms offer a wealth of information, coping strategies, and mindfulness exercises that can be accessed anytime, anywhere.

By Mansi Yadav
1st year

Aarambh Hai Prachand

You might have come across this Goosebumps giving song on Instagram reels or on YouTube shorts. The same goes for a first termer NDA cadet whose aarambh to the soldiering skills in the academy is so intense or I should rather say prachand that will teach them many life saving lessons in a mere six month time. But why the first few terms of the academy are so difficult? The answer to this question is a single word. SENIORS! These sweat seekers who are themselves just eighteen takes immense pleasure in leaving no mercy on the juniors (1st and 2nd termer) despite the busy schedule of cadets that leaves them no choice but to evolve.

National Defence Academy (NDA) is located in khadakwasla, Pune, Maharashtra. It is the first triservice academy in the world established in 1954 with the mission of training cadets (who are less of a soldier and more of a child now) of the three services together before they go on to their respective service academy for further one year of pre- commission training before becoming officers commissioned by the President of India. It also trains foreign cadets and a total of more than 25 Countries have benefitted from the training imparted at the academy for the path to becoming an officer of their respective armies, Truly a Cradle of Military leadership.

Its Alumni include 3 Param Vir Chakra (PVC) recipients and 12 Ashoka chakra recipients, India's highest wartime and peacetime military decoration respectively, awarded for displaying distinguished act of valour. 2nd Lt Arun Khetarpal (PVC) of 17th Poona Horse who laid down his life but not his courage while charging at the enemies in a fierce tank battle in the Indo- Pakistan War of 1971.when he had just turned 21(by the way what's your age?) was himself a first termer in NDA in 1967.

NDA has a Sprawling Campus of 7,015 acres with scenic large buildings of Maroon color that reads out loud its motto of 'Seva Paramo Dharma' (Service Before Self). It has an excellent Infrastructure which includes the iconic Sudan Block(administrative workhorse of NDA), Science Block, Habibulla hall which is a double-storied auditorium, Vyas Library housing more than 50,000 books, Asia's largest mess whose staff are trained so as to serve 2,000 cadets in one go, well maintained classrooms, well equipped labs,three Olympic size swimming pools, gymnasium, 32 footballs fields, 2 polo grounds, a cricket stadium and a number of squash and tennis courts.

There are cadet appointments of sixth term that are responsible for smooth functioning of the academy or assisting the officers in doing so. The appointees are there for basic induction of 1st termers into the academy. But when they are in their daily rigmarde they are like beast; even willing to tear juniors apart. To a 1st termer, everyone is a demigod, with varying levels of fear factors. Although a 1st termer wouldn't trade place with a 2nd termer as 1st termer's mistake are still ignored but 2ndtermer are evaluated by the letter and spirit of the written and unwritten rules. Most of the time they are being given ragda in the squadron (unofficial toughening up training, much more intense then the official one). This is continued well into the 3rd term. By 4th term cadets are street smart enough to manage the vagaries of the tough life.

Now to train these cadets drill, their needs to be someone. And this someone is 'The Drill Ustaad' (Drill Instructors). This creation of God and Army are fond of speaking English but they don't know English, so the result is many a times amusing, for example: " Ye cadet parade ground pe loose motion nahi, hardly stamping chahiye". Drill ustaads are always impeccably turned-out, boots shining and not a crease of their uniform out of place. It would not be wrong to say that the drill ustaad turns a child into a gentlemen and from their into officers of the armed force who in future would lead men/women into battle and would carry on to become future chiefs of the armed forces.

By Pulkit Kumar
3rd year

The Art of Networking: Tips for Building Professional Relationships in College.

Networking is a vital skill for college students, offering opportunities to establish valuable professional connections that can shape future career paths. To navigate the world of networking effectively, students should first cultivate a genuine interest in others and approach interactions with authenticity and curiosity.

Building relationships begins with expanding your social circle both within and beyond your academic program. Attend networking events, career fairs, and industry conferences to meet professionals in your field of interest. Additionally, leverage online platforms like LinkedIn to connect with alumni, industry professionals, and potential mentors.

When engaging in networking conversations, focus on listening attentively and asking thoughtful questions. Show genuine interest in the other person's experiences, perspectives, and career trajectory. Be prepared to articulate your own goals, interests, and strengths concisely and confidently.

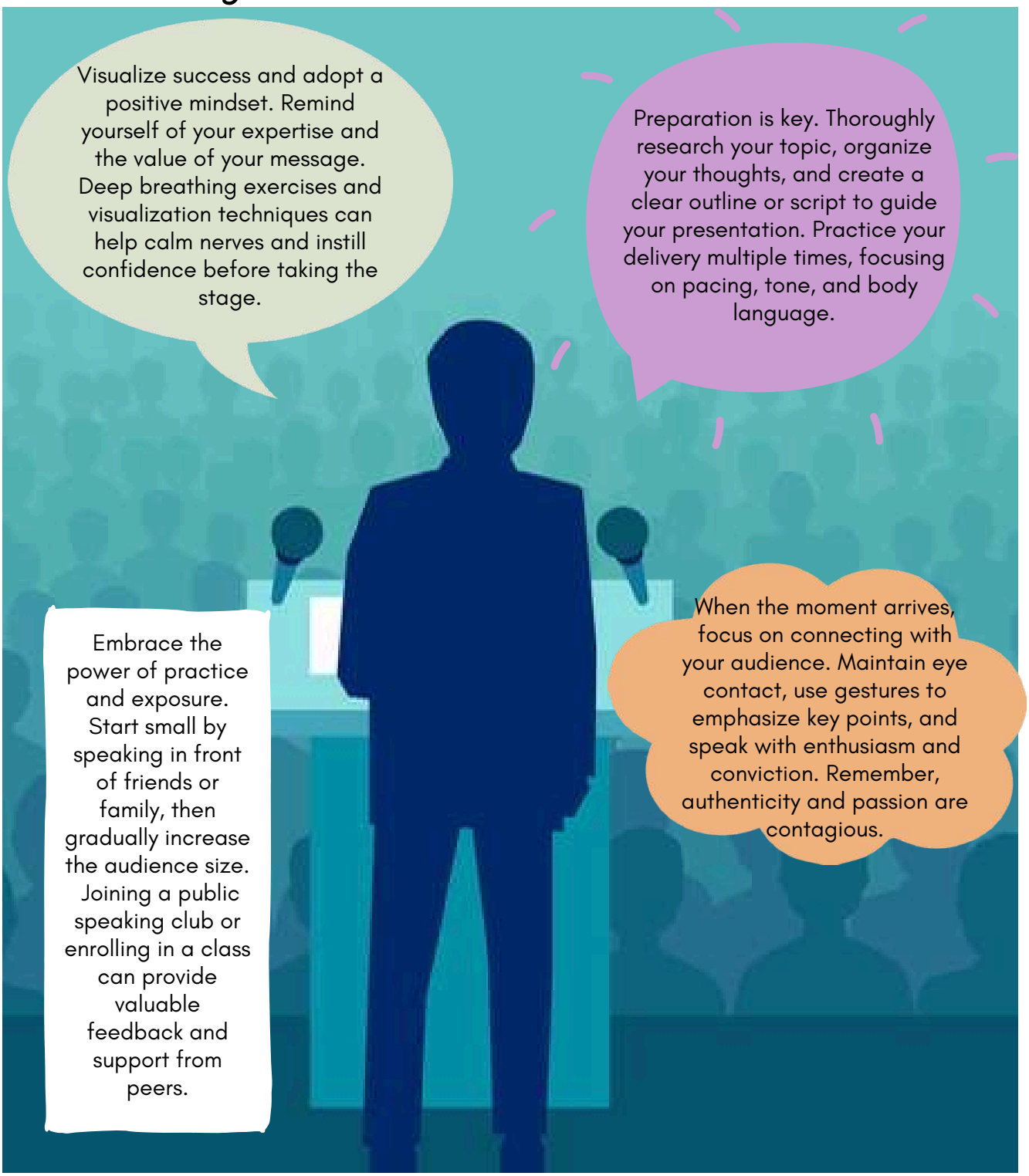
Follow up with individuals you meet by sending personalized messages expressing appreciation for their time and insights. Nurture these connections over time by staying in touch, offering assistance when possible, and seeking opportunities to collaborate or learn from one another.

By approaching networking as a long-term investment in your professional development and cultivating authentic connections, college students can lay the foundation for a successful career journey.

Reference- https://rostrumedu.com/the-importance-of-building-professional-relationships-in-college/

By Mansi Yadav
1st year

Mastering the Art of Public Speaking: Strategies for Confidence and Success



Reference-https://professional.dce.harvard.edu/blog/10-tips-for-improving-your-public-speaking-skills/

By Mansi Yadav
1st year

BATCH OF 2024

BATCH : 2021-24

Adhyan Saxena

I might seem unintelligent, but I'm just too lazy to demonstrate my intelligence.

Ankit

Fascinating to learn something new

Anurag verma

Just like rockstar blazing a trail of awesomeness!

Arpita Singh

Living my best life because I choose self-love every day.

Anuj Kumar Singh

Always be playful like a child

Abhishek

Be a good samaritan

Bheem Singh

Wreck everyone and leave

Dhruv jain

I am brainiac, with a mind full of endless knowledge

Kashish Gouri

Do the best you can until you know better,Then when you know better, do better.

Mayank Kannaujia

Join college , not only for degree but also for skills

Pulkit Kumar

In this world of hotness, let's be cool

Ketan

It's All A Part Of Life, Accept It & Rise.

Parth Sharma

Winning is a habit not choice

Priyank Tomar

No guts , no glory

Pritam

I don't chase them, I replace them!

BATCH : 2021-24

Prince

I like to be myself, and I don't pretend. For instance, I don't dress up for occasions; I am what I am.

Rohit Kumar Sah

Nothing to say

Jahangir Alam

Keep calm and carry on.

Rohit Mehta

Ideas are cheap, execution is everything

Ravi

With discipline as my compass and honour as my guide, I walk the path of integrity.

Soumyadip Ghosh

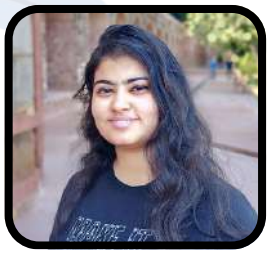
When nothing goes right I go left.

Shruti

My sentence is up. I'm finally free

Shalini priya

Whenever I go , go with my heart



Shriya Malik

Life is all about creating yourself.

Sachin

Practical knowledge is much better than books knowledge

Sagar kumar

Ok

Ujjwal Anand

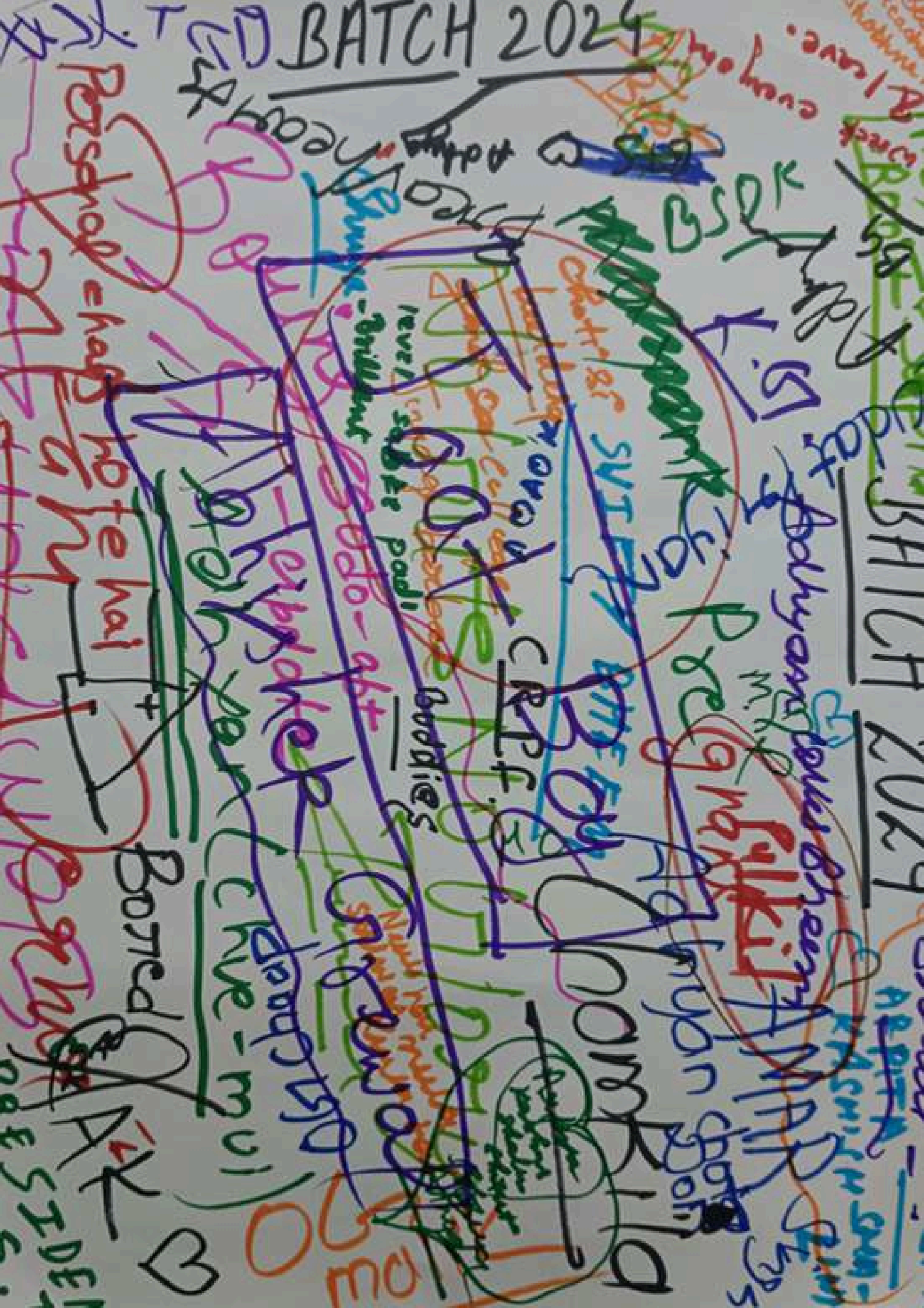
Hey siri, next chapter

Yogesh banjara

Make ability

Manmeet Singh

Friday night?Sounds like a good time to conquer my to-do list.


BATCH 2024

ART ATTACK

Created by
Zeenat Amaan
2nd year

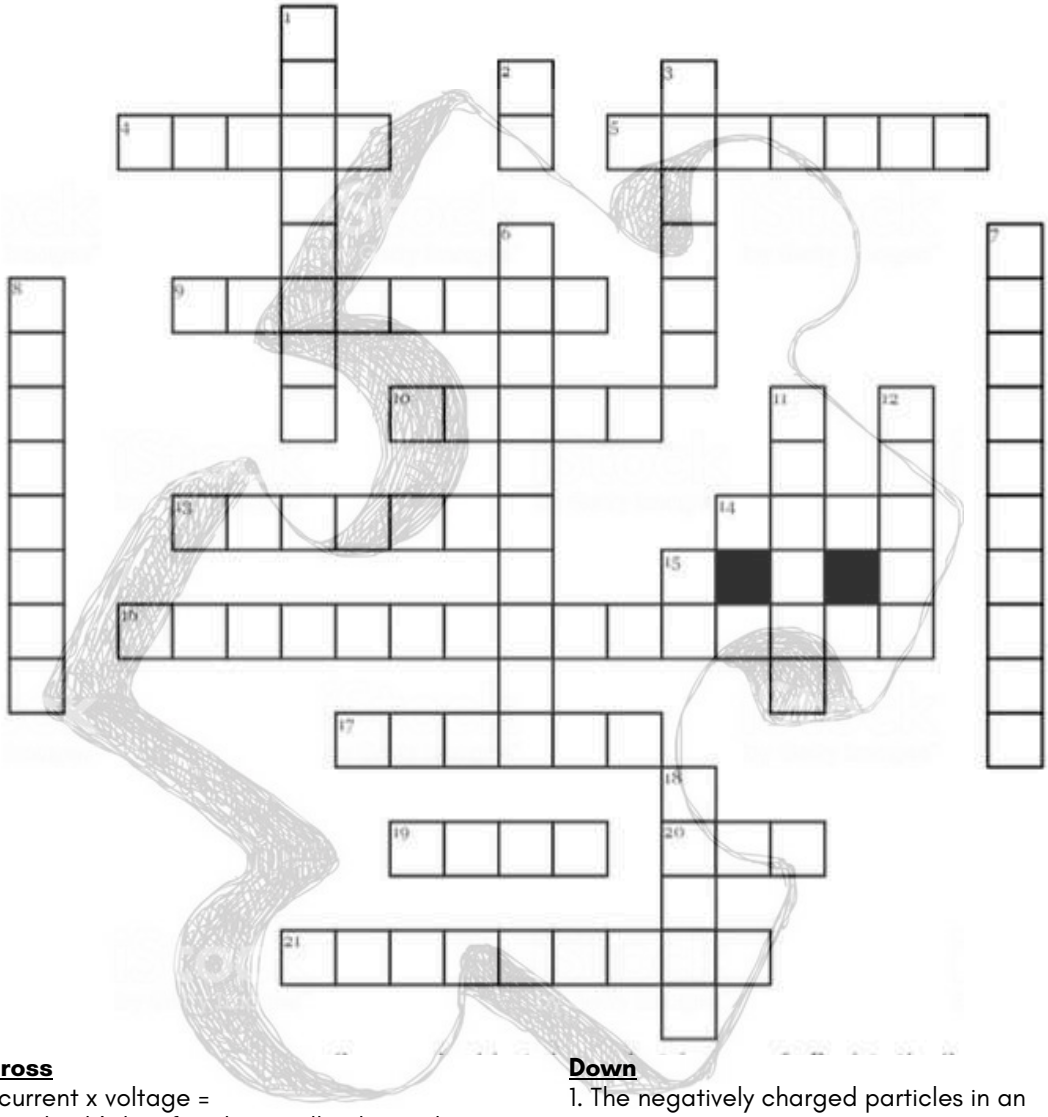
Created by
Suhana Satija
Ist year

Created by
Sneha Jha
Ist year

Created by
Deepak Gupta
2nd year

Created by
Deblina Mandal
2nd year

CROSSWORD



Across

4. current x voltage =
5. Coulomb's law for electrically-charged bodies is similar to _____ law of gravitation for masses.
9. An electric circuit where the same voltage acts independently for devices
10. The prong that grounds
13. voltage/resistance =
14. The unit of electric potential
16. material where free charged particales flow easily at near zero degrees
17. The unit of electric current equal to 1 coulomb per second
19. Surrounds objects in an electric field
20. German physist who discovered th relationship among voltage, current, and resistance.
21. Distorted atoms are electrically

Down

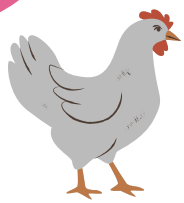
1. The negatively charged particles in an atom
2. electric current moving in one direction only
3. an electric circuit in which devices are connected to have same electric current in all of them
6. Resists the flow
7. A field that produces an "aura" around an object
8. The relationship among the electric force that bodies exert on each other _____ law.
11. Positively charged particles in an atomic nucleus
12. amperes x volts =
15. current that reverses direction and vibrates at 60hz in the US
18. Current x Voltage =

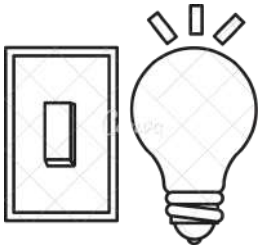
Word Bank

superconductor
s proton
current
resistance
Coulombs
watts
ohm
parallel
aura
dc
electrical
Power
Polarized
ELECTRON
ampere
ac
third
volt
series
Newton

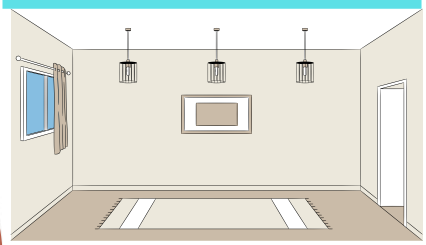
PUZZLES

You have a fox, a chicken, and a sack of grain. You need to transport them across a river, but your boat can only carry you and one item at a time. If you leave the fox alone with the chicken, the fox will eat the chicken. If you leave the chicken alone with the grain, the chicken will eat the grain. How can you transport all three across the river without any of them being eaten?

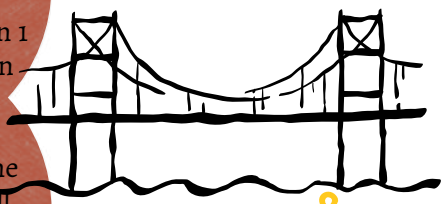




You are in a room with three light switches, each controlling a different bulb in another room. You can't see the bulbs from where you are. You can only enter the other room once. How can you determine which switch corresponds to each bulb?



Four people need to cross a rickety bridge at night which can only hold two people at a time. They only have one flashlight and must share it as they cross. Person A can cross the bridge in 1 minute, person B in 2 minutes, person C in 5 minutes, and person D in 10 minutes. When two people cross the bridge together, they must move at the slower person's pace. How can they all cross the bridge in the shortest time?



You are in a building with 100 floors. You have two identical eggs. You want to find the highest floor from which an egg can be dropped without breaking. You need to determine this while minimizing the number of egg drops. What strategy can you use?

Four princes are all standing at four corners of a square field. They start walking simultaneously towards each other. Each prince maintains a constant speed and keeps moving in the direction he is facing until they collide with another prince. How many total collisions will occur?

You have a 3-gallon jug and a 5-gallon jug. How can you measure out exactly 4 gallons of water?

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ZEENAT AMAAN
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