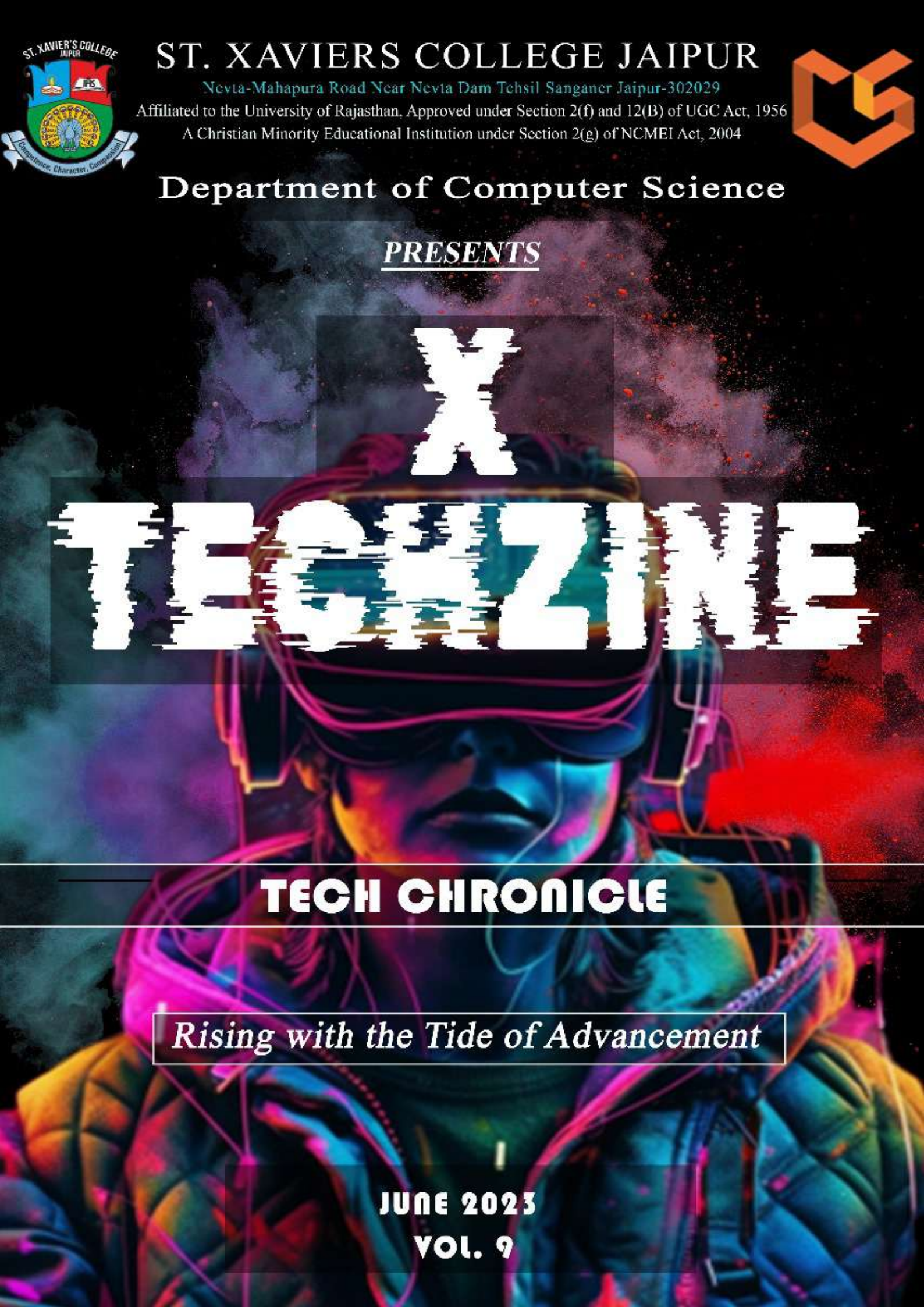
ST. XAVIERS COLLEGE JAIPUR
Nevta-Mahapura Road Near Nevta Dam Tehsil Sanganer Jaipur-302029
Affiliated to the University of Rajasthan, Approved under Section 2(f) and 12(B) of UGC Act, 1956
A Christian Minority Educational Institution under Section 2(g) of NCMEI Act, 2004

Department of Computer Science

PRESENTS

X TECHZINE



TECH CHRONICLE

Rising with the Tide of Advancement

JUNE 2023
VOL. 9

OUR SPECIAL THANKS TO

Rev Fr Dr Arokya Swami SJ (Manager)
Rev Fr Dr S Xavier SJ (Principal)
Rev Fr Dr Raymond Cherubin SJ (Vice Principal)
Rev Fr Dr M Amaldass SJ (Dean, R & D)
All Head and Staff Members
St. Xavier's College, Jaipur

ST. XAVIER'S COLLEGE
JAIPUR

Competence, Character, Compassion

X TECHZINE

TECH CHRONICLES:
RISING WITH THE TIDE OF ADVANCEMENT

Computer Science Magazine

SESSION 2022-2023

DEPARTMENT OF COMPUTER SCIENCE
ST XAVIER'S COLLEGE JAIPUR

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TECH-CHRONICLE

RISING WITH THE TIDE OF ADVANCEMENT

About College

Everyone has an idea, something which they can look forward to, of which they may dream, and for which they may strive Competence, Compassion, Character. These are the fundamental values of St. Xavier's College Jaipur. Our college is a house of modernity and acceptance.

St. Xavier's College Jaipur is distinguished by a singular, intensive core curriculum that provides all the benefits. Xavier's has always supported academic goals and has given its students a compatible and stimulating physical and social environment. It is a place that offers a community in which one can thrive and achieve great heights, appropriate for your preparation and aptitude. It provides the total and harmonious development of the individual.

St. Xavier's College Jaipur is a place where students have close contact with prize-winning and path-breaking faculty, a comprehensive advising system, and a community where individuals can interact with their peers in a deep, meaningful way both inside and outside the classrooms. The academic programs are supported by well-experienced and dedicated faculty, which is committed to equipping the student with the knowledge and skills needed to succeed in today's rapidly changing world. Xavier's is a place where students are free to explore their potential.

Editor's Desk

Dr Dharmveer Yadav
(Editor-X-Techzine)
Dean Student Affairs
Assistant Professor
Dept. of Computer Science
St. Xavier's College Jaipur

We are thrilled to announce the much-awaited launch of magazine the " Tech Chronicle 2022-23, ninth edition by the Department of Computer Science at St. Xavier's College Jaipur, an embodiment of competence, Character, Compassion the three C's of our institution.

This year's magazine reflects the remarkable journey of our students and faculty, capturing the essence of the diverse experiences that make our department so unique. With great enthusiasm, we present a compilation of insightful articles, captivating stories, brilliant artwork, and thought-provoking research from various academic disciplines. Our magazine serves as a testament to the collective efforts and passion of our students and the unwavering dedication of our faculty in shaping the minds of tomorrow's leaders. Through these pages, we hope to foster a culture of curiosity and exploration.

We aim to ignite new ideas, encourage critical thinking, and inspire the pursuit of knowledge beyond the classroom walls. As you flip through the pages, you will find a treasure trove of insights into various subjects, encompassing art, science, technology, and more. I appreciate all the contributors, editorial team members, and staff of Computer Science Department, who worked tirelessly to bring this magazine to life.

Together, let us embrace the power of knowledge and celebrate the unveiling of our department magazine.

Editorial Team

X-TechZine captures the momentous moments. Welcome to its ninth-volume. It's a jam! packed with all the activities that have taken place in an academic year and also a platform to display creative thoughts, literary talent and all the guiding points by the alumni's. This magazine passes through the diverse terrains of knowledge and creativity. A magnificently pleasurable job for me to give you a brief of the phenomenal minds of my department.

-Saniya Pareek, Editor-in-Chief

Introducing the ninth edition of our department's magazine to you fills me with great excitement and satisfaction. This represents the voice and vision of the student after a significant amount of time and effort been invested in it. The TechZine for 2022–2023 has articles, sketches, and a variety of other things. With the active assistance of the administration, professors, and students, TechZine has flourished. . We sincerely hope that every reader enjoys this issue as much as we did when producing it.

-Suhani Gupta, Chief -Designer

We're excited to bring you the ninth edition of our college magazine, filled with insightful articles, and creative expressions from student. We hope you find inspiration and enjoyment within these pages, and we look forward to continuing to showcase the incredible work of our students in the editions to come.

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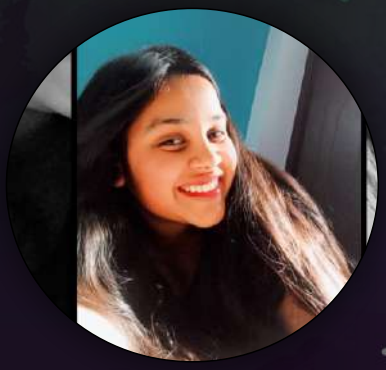
-Kshitij Pareek, Co-Editor



Working for the TechZine was such a wonderful experience. It was challenging, meaningful, and deeply fulfilling. I got to work with a creative team and learnt many things. We exchanged ideas, and worked for a cause that we all care deeply about. It's made me want to be even more active as a volunteer and inspired many ideas for future projects.

-Shreya Sharma, Co- Designer

TechZine is a reflection of our hard work, dedication, and creativity throughout the year. I am excited to announce that it's that time of the year again when we come together to create something truly exceptional. It's an immense pleasure for me to work with this creative and cooperative team on our annual magazine

.

-Sheron S George, Co-Designer

I want to express my deepest gratitude for your unwavering support throughout this publishing journey. The TechZine is a celebration of your voices, passions, and unique perspectives. As we embark on new adventures, let this magazine be a reminder of the shared experiences that have shaped us. Happy Reading!

-Diksha Bhambhani, Co- Designer

TECH-X CLUB

The TECH-X club at St. Xavier's College in Jaipur was established with the goal of fostering community while aiding students in following their interests and hobbies. The goal of Tech-X Club is to give students a variety of chances to learn about information technology and to get a deep insight and understanding of technology. The Club hosts informative lectures, webinars, workshops, conferences, and other events all year round. Members of the TECH-X Club want to advance their education while increasing public understanding of latest technologies .

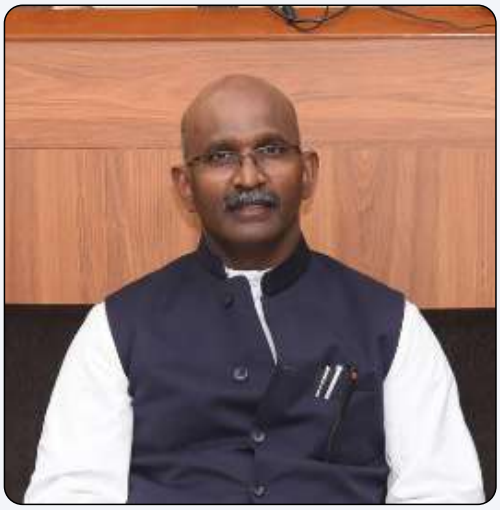
When a person belongs to a group, they are conscious of their identity, passions, and objectives. The students can demonstrate their flexibility, organisational skills, capacity for teamwork, leadership qualities, and commitment to serving other's goals. Club provides a platform where members can develope communication channels, which is advantageous since it promotes the growth of their activities.

The TECH-X Club's objectives are to:

- Promote information technology and education.
- Easy and safe student-to-student information exchange.
- Providing graduates with the fundamental knowledge and abilities.
- Implement the ERP of the College Admissions and College Departments, as well as the Exams and Accounts Departments.

We think the magazine will highlight some of the amazing creative work produced by students and will considerably improve the department's future characteristics.

MESSAGE



It is with great pleasure I discover that the product of the department's diligent efforts, have been published in the form of the Tech Chronicle magazine, by the Department of Computer Science, St. Xavier's College Jaipur. The departmental magazine acts as a collection point for pleasant and memorable moments, occasions, and, most importantly an expression of students' creativity and original writing. It has the capacity to unearth the hitherto hidden talents of the students in a different manner.

This is also a wonderful chance to examine recent research and other technological developments in the field through the guidance provided by faculty members of the Department. The name 'Tech Chronicle' is a good description of what the magazine does: it offers the most important information related tp computer science while also giving readers a peek of the plethora of talent the students have along with the inventive minds of faculty members in the domains of technology and research.

I want to thank the editorial team for their devotion and arduous work on this accomplishment.

Good luck. I hope your future is prosperous.

Rev Fr Dr S Arokya Swamy SJ
Manager
St Xavier's College Jaipur

MESSAGE

With immense joy I hold 'Tech Chronicle', the magazine of the Department of Computer Science at St. Xavier's College in Jaipur, an expression of creativity, knowledge, and the lively spirit that distinguishes our institution. This year's magazine captures the spirit of the varied experiences that make our college community so exceptional, reflecting the extraordinary journey of our students and teachers.

With great enthusiasm, we present a collection of perceptive essays, gripping narratives, stunning visuals, and stimulating research from the field of computer science. The magazine is an evidence of the combined enthusiasm and work of our students, as well as the unshakable commitment of our staff towards educating and grooming the future citizens of the world. We want to promote a culture of inquiry and discovery through the endeavour. We want to spark fresh thinking, promote critical analysis, and motivate knowledge acquisition outside of the four walls of the classroom 'Tech chronicle' thus is the right platform that values the priceless flow of ideas among our students and promotes self-expression, creativity, and openness.

As you flip through the pages you will come across fascinating insights into a variety of topics, including art, science, literature, technology, and more. The magazine highlights our students' intelligence and creativity, helping them to excel in their various industries.

The publication also demonstrates our dedication to environmental responsibility and sustainability. Our goal in creating this version was to be as ecologically responsible as we could. It is a platform that values the priceless flow of ideas among our varied community and promotes self-expression, creativity, and openness.The magazine is a celebration of the power of knowledge and I congratulate the department for putting it all together so aesthetically.

God bless!

Rev Fr Dr S Xavier SJ
Principal
St Xavier's College Jaipur

MESSAGE

The Department of Computer Science has laboured endlessly to paint its canvas as time went on, and with each stroke it came closer to producing its own masterpiece. To give its students, the knowledge, and perspectives they need, St. Xavier's College Jaipur has been constantly redesigning education. Our pedagogy goes well beyond memorization and the four walls of the classroom into every aspect of a student's life to help them grow holistically. We offer a rich academic assistance, mentoring and an environment that supports students as they journey towards self-discovery and self-growth.

'Tech Chronicle' the department magazine is another platform for our talented students to showcase their creativity, knowledge, expertise and skill. The volume is a blend of technological knowledge, innovation, artistic expression and research acumen of the students who have been guided by their teachers at every step. The magazine is a testament to the pool of talent the department has and how the dedicated faculty members channelise it and fashion it into creative expression. The outcome of a united effort is what I see in my hands, and I am proud to go through its pages.

Many congratulations and wishing you all the very best!

Rev Fr Dr Raymond Cherubin SJ
Vice Principal
St Xavier's College Jaipur

MESSAGE

I am glad to know that the Department of Computer Science of St Xavier's college Jaipur is bringing out its Magazine "X-TechZine" for the year 2022-23 which is surely the result of their hard work and success.This college department magazine is a forum which is aptly used for recording events, fond memories, and creative writing. I am sure that this magazine will be informative and resourceful.

Even in this handful time our students and the faculty members have taken up this challenge and have prepared a great opportunity to review their efforts and to analyse their achievements in development and Innovation. Technology is evolving at a rapid rate, and we have tried our best to keep pace with it.True to its name, TechZine gives an insight into the range and scope of the imagination and creativity of our students and faculty members in the field of technology and many more. I applaud the editorial team for the hard work and dedication they have invested in realizing this goal and wish my dear student's success in all future endeavours.

Rev Fr Dr M Amaldass SJ
Dean of Research and Development
St Xavier's College Jaipur

MESSAGE

The Bachelor of Computer Applications (BCA) programme is the most challenging one offered by the department of computer science since it is committed to continuous growth in both its academic and extracurricular performance. The college administration has given us the duty of accepting and conquering the problems that arise every day. Faculty members, the college administration, and then the students all work together to advance the department with their innovative ideas and clever planning. It's a beautiful sight to behold.

I have seen the camaraderie of teachers who went above and beyond the call of duty to make the department successful in every way. The department develops the students' sensitivity while preparing them for entry into a pragmatic world that is changing quickly. The staff's teaching-learning approach expands students' capacity for thought and improves their capacity for critical analysis. Finding such support from management is a true blessing. and the group of teachers who, in addition to offering support, inspire us to keep going by providing advice

Finally, I want to express my gratitude to all my lovely students who helped the department succeed in every way by contributing their time and ideas.

Ms. Keren Lois Daniel
Head of Department

MESSAGE

It is a joy for me to submit a few words to the ninth issue of Tech Chronicle, a yearly publication. The sole aim of Tech Chronicle is to offer a broad range of information with a particular emphasis on the use of various technologies, research, practical applicability, and developments in the newest trends and techniques, which has a significant potential for enhancing student abilities as part of their personality development.

I am pleased by the wide variety of articles since they demonstrate how creative and innovative our students are. I have no doubt that everyone will find the magazine to be highly useful and interesting .I commend the editorial staff for producing such a stunning publication.

Dr Arpita Banerjee
Assistant Professor

MESSAGE

The key components of a successful educational programme are encouraging imagination and innovation. The ideal fusion of the two is a collegiate magazine. In addition to showcasing student achievement, the magazine serves as a tool for inspiring and igniting students' creativity. It also serves to inspire and motivate kids to make learning enjoyable and regular.

I would like to take this opportunity to thank the editorial board of Magazine for their success in releasing the magazine's eighth edition. I'd like to commend the coordination and work of all the students who contributed to its editing and publishing. I'm hoping they all do well.

Dr Madhu Sharma
Assistant Professor

MESSAGE

The Department of Computer Science and Tech-X (IT Club) yearly journal, Tech Chronicle, 2023, is pleased to present its ninth digital edition. The Department of Computer Science imparts comprehensive technological knowledge to students so they can be internationally competent in the complicated and demanding world of today.

The opportunity to contribute to the ninth Tech Chronicle issue of this publication makes me feel honoured. Our group of editors, designers, photographers, and correspondents works arduously to cover events in and around the department and campus each year in addition to acquiring unique material from the student body.

The final work reflects the diversity found in Xavier's academic and extracurricular environments. It was extremely motivating to watch the potential of our BCA students grow every day in a variety of settings. I'm hoping that the insightful and resourceful Tech Chronicle will help the St. Xavier's College, Jaipur students develop their creative skills.

Dr Vaishali Singh
Assistant Professor

MESSAGE

"Determination is the power that sees us through all our frustrations and obstacles.It helps in building our willpower which is the very basis of success".

-Dr APJ Abdul Kalam

Technology has completely changed the world and our daily life to a significant extent. The Department of Computer Science endeavors to provide best professional opportunities to the students for their bright future and imparts technical education to students to make them globally competent in this challenging world.

The ninth edition of the Department of Computer Science's magazine, X-Techzine showcases the department's growth across various areas and highlights the remarkable achievements, awards, and activities throughout the academic year. X-Techzine serves as a source of motivation for students to express their creative thoughts, ideas, views, hopes, aspirations, and talents.I congratulate the whole editorial team who have worked hard to present the triumphs of the students in an ethical manner.

Ms. Pushpanjali Saini
Assistant Professor

MESSAGE

The dynamic world of technology and its profound influence on our lives are proudly highlighted in this newest issue of our department magazine (Techzine 2023). Our society is now completely dependent on technology, which has transformed numerous industries, linked individuals worldwide, and provided solutions to difficult problems. As teachers, we inspire the following generation of innovators and giving them the abilities and information necessary to succeed in this fast-moving digital era.

This edition honours the innovative energy that characterizes our university. Our students are at the vanguard of pushing advancement in everything from ground-breaking research in robotics and artificial intelligence to improvements in sustainable energy and cyber-security. We promote an inclusive environment through interdisciplinary partnerships and industry alliances. We are honoured to see the outstanding accomplishments of our students, who have started innovative businesses, created ground-breaking software, and made a substantial contribution to technical progress. Their enthusiasm, tenacity, and resolve serve as an example to us all and a testament to the calibre of the education we offer.

Let's work together to push limits, encourage innovation, and use technology to build a better future.

Ms. Ritu Sisodia
Assistant Professor

MESSAGE

The capacity for learning is a talent, but the desire to do so is a decision. Students are given technical instruction by the department of computer science to help them become internationally competent while also developing their moral character and sense of compassion in this difficult environment.

Our department put all its effort into engaging activities and overcoming the difficulties we faced. I'd like to congratulate the editorial board's students on all their effort in producing the magazine. This journal offers a venue for students to showcase their originality and let others understand the leadership and brilliance of this outstanding institution.

Mr Rajeev Nokhwal
Laboratory Assistant

PRESIDENT OF THE DEPARTMENT

"If you set your goals ridiculously high and it's a failure, you will fail above everyone else's success."

- James Cameron

Our journey through the realm of Computer Science has been nothing short of extraordinary. X-Techzine,a reflection of our collective efforts, aspirations, and achievements, serves as a testament to the remarkable journey we have embarked on together. As I reflect on the growth we have experienced as individuals and as a community, I am filled with a profound sense of admiration and pride for each and every one of you.

This magazine is not just a collection of words and images; it is a chronicle of our passions, our triumphs, and our vision for the future. Each article, artwork, and contribution embody the spirit of our community – a spirit of curiosity, of collaboration, and of the relentless pursuit of knowledge.

As you flip through the pages of this magazine, I urge you to see beyond the present moment and visualize the possibilities that lie ahead. The world eagerly awaits the skills and ideas we possess, and it is our responsibility to channel our potential towards making a positive impact on society.

Let this magazine serve as a constant reminder of the potential that resides within each of us. Embrace your uniqueness, leverage your skills, and believe in the power of your dreams. As we continue our journey together, let us remain united in our pursuit of excellence and inspire one another to achieve greatness. Our department is more than just an academic institution; it is a tight-knit community of visionaries, dreamers, and collaborators. Together, we foster an environment that encourages creativity, open-mindedness, and a passion for continuous learning. Let us continue to support and uplift one another, for it is through collaboration and shared knowledge that we can unleash our true potential. Let us pledge to use them to better the lives of others and to leave a legacy for generations to come.

Innovate. Inspire. Excel.

Sameep Rungta
BCA III

About the Department

The Department of Computer Science's BCA Course curriculum aims to provide an introductory yet comprehensive view of established and emerging IT areas in various scientific fields with an application-oriented approach and problem-solving skills to produce graduates in the field of computer science who are both technically proficient and ethically aware.

National conferences, seminars, add-on courses (like Photoshop and Coral), certificate courses (like Linux and Android development), ICDL, research initiatives, and short-term training programmes are all organised by the computer science department for both students and faculty. This gives students a variety of possibilities to realise their full potential and develop their creative abilities in a number of professions. A number of well-known training institutions, including the Cyber Crime Awareness Society (CCAS), Pratham Solution Pvt. Ltd., Red Hat course, GRRAS Solution Pvt. Road Arena Multimedia etc. held workshops and provided training at our college's facilities.

The students actively participate in a variety of activities as part of their development as future leaders. On a departmental level, we have student committees that manage the work of departmental periodicals, brochures, websites, student exchange programmes, guest lectures, panel debates, etc. As a department, we have enough faith in our students to know that they will become assets to not just this school and the organisation to which they belong, but also to the nation as a whole.

This raises IT literacy and fundamental knowledge of information systems for domain streams. The academic and professional environments in this programme have improved the students' walking understanding of software technology. Through this course, you'll learn how to effectively express ideas and effectively and efficiently, and it will provide you the knowledge and abilities to use the right tools to efficiently arrange information into formats like outlines, charts, etc. Development of diverse IT skills for electronic database presentation, as well as preparing and delivering a presentation that is effective, are additional essential outcomes.

ELIGIBILITY

ELIGIBILITY FOR ADMISSION TO BCA COURSE:

- A candidate must have passed 10+2 examination (Arts/Science/Commerce) or equivalent with securing 48% or more (minimum pass mark for SC/ST/OBC/SBC candidates) in aggregate without any approximations.
- In regards to reservation of Seats for admission to BCA part 1, the reservation policy of Govt. of Rajasthan/University of Rajasthan will be followed.
- Admission Procedure: Admission to BCA part 1 course will be made on the basis of merit list (10+2 Level).
- Attendance: A candidate shall be required to put in a minimum of 75% attendance at the lectures and 75% attendance at the practical separately in each paper, as per university norms

SYLLABUS 2022-23

Code	Subject	Max. Marks
	Theory	
BCA -101	Computer Fundamentals and Office Management Tools	100
BCA -102	Computer Architecture	100
BCA -103	Operating Systems	100
BCA -104	Principles of Programming Language Through C	100
BCA -105	Web Application Development	100
BCA -106	Mathematics	100
	Practical	
BCA -107	Office Management Tools Lab	100
BCA -108	C Programming Lab	100
BCA -109	Web Application Development Lab	100
BCA -110	Communication and Soft Skills Lab	100

SYLLABUS 2022-23

BCA II		
	Code	Subject
Main	201	Business Accountancy
Main	202	Discrete Mathematics
Main	203	Operating System
Main	204	Database Management System
Main	205	Web design and Multimedia
Elective	206	Object Oriented Programming (C++)
Practical	207	Database Laboratory
Practical	208	Object Oriented Laboratory
Practical	209	Web Designing Laboratory
Practical	210	Multimedia Laboratory

BCA II I		
	Code	Subject
Main	301	Algorithm s and Data Structures (Using C/C++)
Main	302	System Design Concepts
Main	303	Network Technologies
Main	304	Core Java Programming
Main	305	E-Commerce
Elective	306 (A)	PHP
Practical	306(B)	Linux
Practical	307	Networking Laboratory
Practical	308	Java Laboratory
Practical	309(A)	PHP Laboratory
Practical	309(B)	Linux Laboratory
Practical	310	Project

PROGRAM OUTCOME

INTRODUCTION is one of the most popular major international studies. Computer science is a dynamic and rapidly growing field of study that plays a vital role and makes a student become an integral part of the world in which they live today. A degree in this field would deepen their understanding of recent technologies. The study has a theoretical and mathematical focus and involves exploring processes such as algorithms, to solve problems. This would help them to face the complex problem that keeps changing and create a cutting- edge solution to face those challenges. Computer science can be applied in any multi-disciplinary field of their interest to address a wide range of issues.

PROGRAM OUTCOMES

PO 1. The graduates are expected to develop an ability knowledge of mathematics, science, and programmining in appropriate discipline.

PO 2. The graduates are expected to apply algorithmic principles and computer science theory in the modelling, design, and conducting of experiments as well as data interpretation and analysis along with the mathematical concepts.

PO3. The graduates are expected to meet the desired needs with a realistic ap-proach to designing a system, or component, through constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

PO 4. The graduates are expected to understand the global impact of computer science and try to develop an ability to identify, formulate and solve real-life problems.

PO 5. The graduates are expected to function effectively in multi-disciplinary fields to accomplish a common goal.

PO 6. The graduates are expected to develop a skilled understanding of professional ethics, legal issues, security, and social problems as their responsibility.

PO 7. The graduates should have good knowledge of contemporary issues and are expected to communicate effectively with a range of audiences.

PO 8. The graduates should be able to recognize the need for lifelong learning and are expected to apply the techniques, skills, and modern information tech-nology tools that are necessary for practice.

.PO 9. Students have knowledge and expertise in at least one procedure-oriented and object-oriented programming language.

PO 10. A degree in computers can translate to roles in many different industries

PROGRAM SPECIFIC OUTCOME

BACHELOR OF COMPUTER APPLICATIONS

The Program Specific Outcomes (PSOs) are attained by students of the BCA department who want to make their career in IT Information Technology) field the term 'program' refers to the entire scheme of study generally designed according to the requirement and demands of the IT industry. It generates a lot of scope for the IT developers. BCA degree provides the basic qualification to the students to compete with the Engineering students. BCA graduates have a good scope in jobs such as Video Making and After Effects. Web Developer, Web Designer, Network Administrator, System Manager, Computer Programmer, Software Developer, Software Tester, etc. depending on the skills they acquire during their graduate program. They can also pursue further study according to their interest or can provide freelancing services to society.

The programme specific outcomes relating to BCA degree programme may include the following:

PO 1. Develop an understanding of computers.

PO 2. Information of need and usage of operating system.

PO 3. Knowledge of editing software's

PO4. Knowledge of Basic math's.

PO 5. Understanding the architecture of computer.

PO 6. Knowledge of Programming Languages,

PO 7. Information of features and importance of programming languages.

PO 8. Develop an understanding of graphic designing.

PO9. Analyze the importance of key features in designing of websites.

PO 10. Knowledge of Database services.

PO 11. Working exposure on various operating system.

PO 12. Develop awareness of security, privacy and IT lows and Acts.

PO 13. Develop knowledge to create live projects.

PO 14. Information on need for doing research.

COURSE OUTCOME

BCA Ist Year Course: Outcomes

Course: Computer Fundamentals & Office Management Tools **Paper code: 101(Theory)**

CO 1. Basic knowledge of Operating system, FAT and NT file system file and director} structures and naming rules of files. booting process. System files. Dos Commands (internal & external).

CO 2. Introduction about Windows 7/8. Windows concept. Feature, Desktop, Taskbar, Start menu. My computer Recycle bin, windows accessories (calculator. Notepad, Paint, Word Pad. Character Map. Windows Explorer.

CO 3. About Entertainment System Tools, Communication sharing information between programs. Smart device tools and applications.

CO 4. Introduction about Microsoft Access: Planning a database (tables, queries, forms, and reports), creating and editing database, customizing tables.

CO 5. About linking tables, designing and using form modifying database structure. Sorting and indexing a database, querying a database and generating reports.

CO 6. Brief about PowerPoint: Creating and viewing a presentation, managing Slide Shows, navigating through a presentation, using hyperlinks, advanced navigation with action settings, and action buttons. Organizing formats with Master Slides, applying and modifying designs, adding graphics~ multimedia, and special effects.

CO 7. Brief about MS Word, word processing, MS word features, creating, saving, and opening documents in word, Interface toolbar, rulers, menus, keyboard shortcut, editing, previewing, printing & formatting a document, advanced features of MS word find and replace using the thesaurus. mail merge, handling graphics, and tables, converting a Word document into various formats Like Text, rich text format, and Word perfect. etc.

COURSE OUTCOME

CO 8. Introduction about MS Excel: Worksheet basics, creating a worksheet, entering data into a worksheet, data, text, dates, alphanumeric 'values saving & quitting worksheet, opening and moving around in an existing worksheet Toolbars and menus Keyboard shortcuts, working with single and multiple workbooks, working with formula & cell referencing, Auto sum, copying formulas, absolute and relative addressing, formatting of a worksheet, previewing & printing worksheet, Graphs, and Charts, Database, macros, multiple worksheets—concepts.

CO 9. Understand the hardware, architecture, classification and features of the Computer System.

CO 10. Understand the internal and external bus architectures and various cards and ports of the Computer System.

CO 11. Know about Input, Output, Storage devices; and their access mechanisms.

CO 12. Understand Instruction and Execution cycles.

CO 13. Understand the operation of control registers and controlling of arithmetic operations.

CO 14. Understand Register transfer language.

CO 15. Understand CPU and ALU design and their internal architecture.

CO 16. Know about the design and implementation of a microsequencer and Pentium microprocessor.

CO 17. Understand various addressing techniques.

CO 18. Know about types of RAM and ROM.

CO 19. Know about Microprocessors and Microcontrollers.

COURSE OUTCOME

Course: Computer Architecture **Paper code: 102 (Theory)**

CO 1. Identify various types of information systems concepts and terminologies.

CO 2. Explain the types of business needs that can be addressed using information technology-based solutions.

CO 3. Explain what systems are and how they are developed.

CO 4. Identify and describe the phases of the systems development life cycle.

CO 5. Follow the analysis portion of the Systems Development Life Cycle in a disciplined manner.

CO 6. Develop and evaluate system requirements.

CO 7. Work effectively in a team environment.

CO 8. Describe the role and responsibilities of the systems analyst in the development and management of systems.

CO 9. Explain the need for and value of a formalized step-by step approach to the analysis, design, and implementation of computer information systems.

CO 10. Use tools and techniques for process and data modelling.

CO 11. Describe the role and responsibilities of the participants in information systems development.

CO 12. Develop a feasibility analysis of a proposed system.

CO 13. Develop and deliver a Requirements Definition Proposal for a new system in a well-structur ed business proposal.

COURSE OUTCOME

Course: Operating System **Paper code: 103 (Theory)**

CO 1. Explain the nature & scope of operating system.

CO 2. Factors In Operating System Design, Performance and Security Of Operating System.

CO 3. Characteristics of Devices Used in Computer, Management of Devices, Device Controller and Device Driver.

CO 4. Knowledge of Interrupts.

CO 5. Understanding of Process Control Block.

CO 6. Difference Between Process and Thread.

CO 7. Knowledge of various types of process.

CO 8. Understanding of Scheduling Algorithm.

CO 9. Understanding Semaphores, Synchronisation, Inter Process Communication.

CO 10. Knowledge about Deadlocks.

CO 11. Understanding Memory Management, Types, Semaphores, Demand Paging.

CO 12. Knowledge of various file types.

CO 13. Understanding various operating system types.

COURSE OUTCOME

Course: Principles of Programming Language through C Paper code: 104 (Theory)

CO 1. Able to understand Basic Knowledge of Programming Language, Programming Domains.

CO 2. Able to Understand Importance of C Language, History and Evolution of Programming Language.

CO 3. Understand the process of writing Algorithms, Pseudocode, and Flowchart.

CO 4. Illustrate the flowchart and design an algorithm for a given problem and develop C pr ograms.

CO 5. Understanding a concept of functional hierarchical code organization.

CO 6. Understand the process of writing, compiling, and executing programs in C.

CO 7. Design, implement, test, debug, and document programs in C.

CO 8. Understanding a defensive programming concept. Ability to handle possible errors.

CO 9. Difference Between Syntax and Semantics errors.

CO 10. Able to understand Data Types, Operators, Basic Structure and, Variables, Precedence of Operators, Managing Input Output Operations.

CO 11. Able to understand Decision Making Statements, Knowledge of Iteration, Types of Iteration.

CO 12. Develop conditional and iterative statements to write C programs.

COURSE OUTCOME

Course: Web Application Development **Paper code: 105 (Theory)**

CO 1. Introduction to computers, classification of computers, anatomy of computer, constituents and architecture, microcontrollers.

CO 2. Internet basics, features, applications, services, internet service providers, domain name system, browsing, email, searching

CO 3. Introduction to Internet basic, e-mail, Web basics, introduction of HTML and CSS programming .

CO 4. Introduction of computers, classification of computers, anatomy of computer, constituents and architecture, microcontrollers.

CO5. Office Activities using Word Processor Software

CO 6. Office Activities using Spreadsheets Software

CO 7. Office Activities using Presentation Software

CO 8. Office Activities using Database Software

CO 9. Office Activities involving Multimedia Editing (Images, Video, Audio …)

CO10. Operating System Configuration, MS Configuration.

COURSE OUTCOME

Course: Basic Mathematics **Paper code: 106 (Theory)**

CO 1. Students will acquire problem-solving skills in a broad range mathematics.

CO 2. Students will be able to produce and judge the validity of rigorous mathematical arguments.

CO 3. Students will be able to communicate mathematical ideas and arguments, both written and orally.

CO 4. Students will be prepared to use mathematics in their careers.

CO 5. Utilize technology to address mathematical ideas.

CO 6. Apply knowledge of computing, mathematics, science, and engineering appropriate to the modeling and design of the softwar e.

CO 7. Implement the numerical methods using computer software and apply them in examples.

COURSE OUTCOME

Course: Office Management Tools Lab **Paper code: 107 (Practical)**

CO 1. Introduction to graphics software.

CO 2 . Understanding the need and importance of graphics designing.

CO 3. Explaining the requirement and importance of good quality photographs.

CO 4. Information on various types of software.

CO 5. Understand the use of different tools available in Corel Draw and Photoshop Graphic Designing software.

CO 6. Able to design information brochures, visiting cards, flex, posters, web pages etc. using graphic designing tools.

CO 7. Information on misuse of digitally edited pictures.

COURSE OUTCOME

Course: C-Laboratory **Paper code: 108 (Practical)**

CO 1. Understand the process of writing, compiling, and executing programs in C.

CO 2. Read, understand and trace the execution of programs written in C language.

CO 3. Understanding a concept of functional hierarchical code organization.

CO 4. Write the C code for a given algorithm.

CO 5. Design, implement, test, debug, and document programs in C.

CO 6. Illustrate flowchart and algorithm of the given problem.

CO 7. Understand basic Structure of the C-Programming, declaration and usage of variables.

CO 8. Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.

CO 9. Ability to handle possible errors during program execution.

CO 10. Write programs that perform operations using derived data types.

CO 11. Understanding a functional hierarchical code organization.

CO 12. Ability to define and manage data structures based on problem subject domain.

CO 13. Ability to work with textual information, characters and strings.

COURSE OUTCOME

CO 14. Ability to work with arrays of complex objects.

CO 15. Understanding a defensive programming concept.

CO 16. Program with pointers and arrays, perform pointer arithmetic, and use the pre-processor.

CO 17. Understand how to write and use functions, how the stack is used to implement function calls, and parameter passing options.

CO 18. Understand and use the common data structures typically found in C programs — namely arrays, strings, lists, trees, and hash tables.

CO 19. Write C programs using operators.

CO 20. Exercise conditional and iterative statements to Write C programs.

CO 21. Write C programs using Pointers to access arrays, strings, and functions.

CO 22. Write C programs using pointers and allocate memory using dynamic memory management functions.

COURSE OUTCOME

Course: Web Designing Laboratory **Paper code: 109 (Practical)**

CO 1. Able to recognize the key elements of www.

CO 2. Able to recognize the components available for security and privacy of the systems and network.

CO 3. Able to create HTML web pages and execute them.

CO 4. Able to use different HTML tags.

CO 5. Able to create web pages with frames.

CO 6. Able to implement different styling ways and related attributes on webpages.

CO 7. Able to implement filters, Iframe, and layers on webpages.

CO 8. Able to create web pages with JavaScript.

CO 9. Able to use jQuery on web pages. Able to create pages with AJAX.

CO 10. Able to create and publish websites.

COURSE OUTCOME

Course: Communication And Soft Skills Lab **Paper code: 110 (Practical)**

CO 1. To understand and apply knowledge of human communication and language processes as they occur across various contexts, e.g., interpersonal,intrapersonal, small group, organizational, media, gender, family, interculturalcommunication, technologically mediated communication, etc. from multiple perspectives.

CO 2. Ability to find, use, and evaluate primary academic writing associated with the communication discipline.

CO 3. Develop knowledge, skills, and judgment around human communication that facilitate their ability to work collaboratively with others. Such skills could include communication competencies such as managing conflict, understanding small group processes, active listening, appropriate self disclosure, etc.

CO 4. Understand how to decide between the different types of interviews and develop the skills needed for approaching different types of interviews.

CO 5. Create a resume, a cover letter, and a profile on professional social media sites.

CO 6. Create various types of business reports.

CO 7. Create meaningful visual media.

CO 8. Discuss different processes and considerations involved in writing in business.

COURSE OUTCOME

CO 13. Working on Arrays and Strings, One Dimensional and Multi-Dimensional Array.

CO 14. Able to understand String Functions, Reading and Writing String, Use of String Handling Functions with the help of various programs.

CO 15. Exercise user defined functions to solve the problems.

CO 16. Needs and Elements of User Defined Functions, Use of System Defined Functions, Return Types in Functions.

CO 17. Difference Between Call by Value and Call by Reference, Scope, Visibility, and Lifetime of Variables.

CO 18. Accessing the Address of Variables, Declaration and Initialization of Pointer Variable, Array Pointers, Function Pointers.

CO 19. Inscribe C programs that use Pointers to access arrays, strings, and functions.

CO 20. Inscribe C programs using pointers and to allocate memory using dynamic memory management functions.

CO 21. Exercise user-defined data types including structures and unions to solve problems.

CO 22. Defining and Declaring Structures, Enumerated Data Types, Unions Accessing Variables of Structures, Operations on Structures.

CO 23. Knowledge of File, Its Type. Various File Handling Pointers, Operations on File, Dynamic Allocation of Memory.

CO 24. Exercise files concept to show input and output of files in C.

COURSE OUTCOME

BCA IInd Year Course: Outcomes

Course: Business Accountancy **Paper code: 201 (Theory)**

CO 1. To understand and apply the essential numerical skills required for book-keeping and accounting.

CO 2. To understand the relationship between the accounting equation and double-entry book-keeping.

CO 3. To demonstrate through a test a mastery of the principles of book-keeping.

CO 4. To analyze accounting information for internal and external decision-making.

CO 5. To understand the use of financial statements as a decision-making tool.

COURSE OUTCOME

Course: Discrete Mathematics **Paper code: 202 (Theory)**

CO 1. Able to understand basic terminology, formal logic, Notation, and its application.

CO 2. Able to understand different types of number systems.

CO 3. Able to Convert values from decimal, binary, octal, hexadecimal, and binary-coded decimal number systems to each other and back to the other systems.

CO 4. Able to understand the binary number representation along with its operations like Addition, Subtraction, Multiplication, and Division of binary numbers.

CO 5. Able to understand basic terminology, formal logic, Notation, and its application.

CO 6. Understand the notion of mathematical thinking, and mathematical proofs and to apply them in problem solving.

CO 7. Ability to reason logically; Able to specify and manipulate basic mathematical.

CO 8. Ability to understand relations, Digraph, and lattice.

CO 9. Ability to understand the use of functions, graphs and their use in programming applications.

CO 10. Ability to understand Sets, relations and functions, their algebra, duality, power sets, and partitions. Principle of Strong Mathematical Induction, Product sets.

COURSE OUTCOME

CO 11. Ability to analyze various binary relations characteristic function and Recursive functions.

CO 12. Ability to understand logical operators, Implications, Tautologies, the validity of arguments, and quantifiers.

CO 13. Ability to understand Graphs, connectivity. Algorithms to find out the shortest path in graphs.

CO 14. Able to understand the basic concept graphs, trees, and related algorithms.

CO 15. Able to understand trees, Rooted trees, binary trees, tree traversal algorithms, and Minimum Spanning Trees.

COURSE OUTCOME

Course: Operating System **Paper code: 203 (Theory)**

CO 1. Explain the nature & scope of operating system.

CO 2. Factors In Operating System Design, Performance and Security Of Operating System.

CO 3. Characteristics of Devices Used in Computer, Management of Devices, Device Controller and Device Driver.

CO 4. Knowledge of Interrupts.

CO 5. Understanding of Process Control Block.

CO 6. Difference Between Process and Thread.

CO 7. Knowledge of various types of process.

CO 8. Understanding of Scheduling Algorithm.

CO 9. Understanding Semaphores, Synchronisation, Inter Process Communication.

CO 10. Knowledge about Deadlocks.

CO 11. Understanding Memory Management, Types, Semaphores, Demand Paging.

CO 12. Knowledge of various file types.

CO 13. Understanding various operating system types.

COURSE OUTCOME

Course: Database Management System **Paper code: 204 (Theory)**

CO 1. Understand the fundamentals of a database systems Design and draw ER and EER diagram for the real-life problem.

CO 2. Able to differentiate between Database management system and file processing system. Study of different data models.

CO 3. Convert conceptual model to relational model and formulate relational algebra queries.

CO 4. Design and create queries in the database using SQL.

CO 5. Analyze and apply concepts of normalization to relational database design.

CO 6. Understand the concept of transaction, concurrency and recovery.

CO 7. Able to describe fundamental elements of relational data models and master the basics of SQL.

CO 8. Able to understand the concepts of integrity, security, and normalization approach.

CO 9. Able to develop skills for query processing and optimization.

CO 10. Able to identify the basic issues of transaction processing.

COURSE OUTCOME

Course:Web Designing and Multimedia **Paper Code: 205(Theory)**

CO 1. Explain the nature & scope of operating system.

CO 2. Factors In Operating System Design, Performance and Security Of Operating System.

CO 3. Characteristics of Devices Used in Computer, Management of Devices, Device Controller and Device Driver.

CO 4. Knowledge of Interrupts.

CO 5. Understanding of Process Control Block.

CO 6. Difference Between Process and Thread.

CO 7. Knowledge of various types of process.

CO 8. Understanding of Scheduling Algorithm.

CO 9. Understanding Semaphores, Synchronisation, Inter Process Communication.

CO 10. Knowledge about Deadlocks.

CO 11. Understanding Memory Management, Types, Semaphores, Demand Paging.

CO 12. Knowledge of various file types.

CO 13. Understanding various operating system types.

COURSE OUTCOME

Course: Object Oriented Programming (Elective course) **Paper Code: 206 (Theory)**

CO 1. Understand the features and needs of object-oriented programming concepts.

CO 2. Learn to discover errors in a C++ program and understand how to fix them.

CO 3. Understand the importance of classes and objects to propose computational solutions for real-life problems.

CO 4. Understand how to implement object-oriented concepts like encapsulation, inheritance and polymorphism in C++.

CO 5. Able to write C++ programs, and understand and fix the errors to execute them successfully.

CO 6. Able to use functions and pointers within C++ programs.

CO 7. knowledge to understand the concept of function overloading, operator overloading, virtual functions and polymorphism.

CO 8. Understand dynamic memory management techniques using pointers, constructors, and destructors, in programming structures.

CO 9. Understand how to perform input-output streaming, operator overloading, file and exception handling using C++.

CO 10. Able to construct and develop C++ applications that would interact with hardware.

COURSE OUTCOME

Course: Database Laboratory **Paper Code: 207 (Practical)**

CO 1. Understand, appreciate and effectively explain the underlying concepts of database technologies.

CO 2. Design and implement a database schema for a given problem-domain.

CO 3. How to Normalize a database.

CO 4. Populate and query a database using SQL DML/DDL commands.

CO 5. Declare and enforce integrity constraints on a database.

CO 6. Concept of transaction and concurrency.

CO 7. Understand database concepts and structures.

CO 8. Understand the objectives of data and information management.

CO 9. Understand data modeling and database development process.

CO 10. Construct and normalize conceptual data models. Implement a relational database into a database management system.

CO 11. Become proficient in using database query language, i.e., SQL.

COURSE OUTCOME

Course: Object-Oriented Laboratory **Paper Code: 208 (Practical)**

CO 1. This lab work provides the object-oriented programming approach in connection with the C++language.

CO 2. Understand the difference between the top-down and bottom-up approach.

CO 3. Apply the concepts of object-oriented programming in practical application.

CO 4. Apply virtual and pure virtual function & complex programming situations.

CO 5. Writing programs using the concept of polymorphism.

CO 6. Applying the Programming assignments based on Encapsulation and dynamic binding.

CO 7. Use of exception handling should be used in real-time programming using C++.

CO 8. Illustrate the process of data file manipulations using C++.

COURSE OUTCOME

Course: Web Designing Laboratory **Paper Code: 209 (Practical)**

CO 1. Able to recognize the key elements of www.

CO 2. Able to recognize the components available for security and privacy of the systems and network.

CO 3. Able to create HTML web pages and execute them.

CO 4. Able to use different HTML tags.

CO 5.. Able to create web pages with frames.

CO 6. Able to implement different styling ways and related attributes on webpages.

CO 7. Able to implement filters, Iframe, and layers on webpages.

CO 8. Able to create web pages with JavaScript.

CO 9. Able to use jQuery on web pages. Able to create pages with AJAX.

CO 10. Able to create and publish websites.

COURSE OUTCOME

Course: Multimedia **Paper Code: 210 (Practical)**

CO 1. Introduction to graphics software.

CO 2 . Understanding the need and importance of graphics designing.

CO 3. Explaining the requirement and importance of good quality photographs.

CO 4. Information on various types of software.

CO 5. Understand the use of different tools available in Corel Draw and Photoshop Graphic Designing software.

CO 6. Able to design information brochures, visiting cards, flex, posters, web pages etc. using graphic designing tools.

CO 7. Information on misuse of digitally edited pictures.

COURSE OUTCOME

BCA IIIrd Year Course: Outcomes

Course: Algorithm and Data Structures using C++ **Paper Code: 301(Theory)**

CO 1. To Make Student Understand the Difference Between Flow Chart, Algorithm, and Pseudocode, Types of Complexity and Their Efficiency.

CO 2. Introduction to Linear and Non-Linear Data Structure Like Array, Stacks, Queues Etc.

CO 3. Understanding various operations on Stack, Queues with Array and Linked List.

CO 4. Understanding various types of Linked List.

CO 5. Understanding about Trees, Operation on Trees.

CO 6. knowledge of Tree Traversal Algorithm, MST.

CO 7. Detail explanation of Graph, types representation.

CO 8. Develop an understanding of various Graphs Traversal Algorithms and their representation.

CO 9. Describe different Types of Searching and Sorting.

CO 10. Explain the relevance of sorting and searching.

COURSE OUTCOME

Course: System Design Concepts **Paper Code: 302 (Theory)**

CO 1. Identify various types of information systems concepts and terminologies.

CO 2. Explain the types of business needs that can be addressed using information technology-based solutions.

CO 3. Explain what systems are and how they are developed.

CO 4. Identify and describe the phases of the systems development life cycle.

CO 5. Follow the analysis portion of the Systems Development Life Cycle in a disciplined manner.

CO 6. Develop and evaluate system requirements.

CO 7. Work effectively in a team environment.

CO 8. Describe the role and responsibilities of the systems analyst in the development and management of systems.

CO 9. Explain the need for and value of a formalized step-by step approach to the analysis, design, and implementation of computer information systems.

CO 10. Use tools and techniques for process and data modelling.

CO 11. Describe the role and responsibilities of the participants in information systems development.

CO 12. Develop a feasibility analysis of a proposed system.

CO 13. Develop and deliver a Requirements Definition Proposal for a new system in a well-structured business proposal.

COURSE OUTCOME

Course: System Design Concepts **Paper Code: 302 (Theory)**

CO 1. Identify various types of information systems concepts and terminologies.

CO 2. Explain the types of business needs that can be addressed using information technology-based solutions.

CO 3. Explain what systems are and how they are developed.

CO 4. Identify and describe the phases of the systems development life cycle.

CO 5. Follow the analysis portion of the Systems Development Life Cycle in a disciplined manner.

CO 6. Develop and evaluate system requirements.

CO 7. Work effectively in a team environment.

CO 8. Describe the role and responsibilities of the systems analyst in the development and management of systems.

CO 9. Explain the need for and value of a formalized step-by step approach to the analysis, design, and implementation of computer information systems.

CO 10. Use tools and techniques for process and data modelling.

CO 11. Describe the role and responsibilities of the participants in information systems development.

CO 12. Develop a feasibility analysis of a proposed system.

CO 13. Develop and deliver a Requirements Definition Proposal for a new system in a well-structured business proposal.

COURSE OUTCOME

CO 14. Explain the common ways projects fail and how to avoid these failures.

CO 15. Implement various project management tools

CO 16. A firm basis for understanding the life cycle of a systems development project.

CO 17. An understanding of the analysis and development techniques required as a team member of a medium-scale information systems development project.

CO 18. An understanding of the ways in which an analyst's interaction with system sponsors and users play a part in information systems development.

CO 19.Experience in developing information systems models.

CO 20. Experience in developing systems project documentation.

COURSE OUTCOME

Course: Network Technologies **Paper Code: 303 (Theory)**

CO 1. Explore the basis of computer networks and the types of network.

CO 2. Enumerate the layers of the OSI model and TCP/IP, explain the function(s) of each layer.

CO 3. Understand the various routing protocols.

CO 4. Understand easily the concepts of network security, mobile, and ad hoc networks.

CO 5. Analyze different MAC mechanisms (Aloha, Slotted Aloha, TDMA, and FDMA) and understand their pros and cons.

CO 6. Understanding the switching techniques of circuit and packet.

CO 7. Brief idea of SS7 and X25 routing protocol.

CO 8. Understanding the functioning of Data Encoding: Full Duplex and Half Duplex.

CO 9. Understand how the data communication through satellites and optical fiber communication travels through the medium of cables.

CO 10. Predict ethical, legal, security, and social issues related to computer networks through data communication.

COURSE OUTCOME

Course: Core Java Programming **Paper Code: 304 (Theory)**

CO 1. Able to understand the concept of Object-Oriented Programming & Java Programming Constructs. Introduction getting and installing the Java development kit, java features like security, portability, byte code, java virtual machine, object-oriented, robust, and multithreading.

CO 2. Architectural neutral, distributed and dynamic, java programming language structure and syntax, control statement (The if statement, Logical operators, the conditional operators, switch statement, variable scope, loops0.

CO 3. Java array, java string, operations on a string and string buffer objects, class, objects, methods, problem-solving classes, objects, relationship, Inheritance, types of inheritance, packages and interfaces, exception handling.

CO 4. Java utilities in java.lang, java. util, java.io, GUI in java using AWT and swings, event handling mechanism, AWT based effective GUI in java: detailed overview of AWT classes.

CO 5. Able to understand Graphics primitives and UI components, layout features, standalone GUI application, Layout managers, implementation event driven mechanism, delegation of event model, listeners and adapters, Inner classes.

CO 6. Introduction to applets coding, Applets life cycle, Graphics Facilities, color and font, passing parameters to applets, applets context, inter applet communication, Fundamental of threading java coding with thread classes, Thread management in java Implicit wait, using a runnable interface, Thread synchronization, inter thread communication.

CO 7. Introduction about URL Class and its usage through connections, Sockets based connectivity, TCP/IP sockets and server sockets, datagram sockets, collection in java array, list, stack, queue, hash table, collection class hierarchy, JDBC, and Jar files.

COURSE OUTCOME

Course: E-Commerce **Paper Code: 305 (Theory)**

CO 1. Define and differentiate various types of Ecommerce.

CO 2. Describe Hardware and Software Technologies for Ecommerce.

CO 3. Explain payment systems for E - commerce.

CO 4. Describe the process of Selling and Marketing on the web.

CO 5. Define and Describe E-business and its Models.

CO 6. Discuss various E-Business Strategies.

COURSE OUTCOME

Course: PHP (Elective course) **Paper Code: 306 B (Theory)**

CO 1. Introduction to PHP.

CO 2. Difference between server-side scripting and client- side scripting, their importance and relevance.

CO 3. Explaining the concept of the datatypes, syntax.

CO 4. Knowledge decision making statements, iterations.

CO 5. Understanding arrays and its types.

CO 6. Understanding the concept of strings.

CO 7. Various functions performed on strings.

CO 8. A detailed analysis of functions, its types, arguments.

CO 9. Introduction to form handling.

CO 10. Knowledge of encryption and security functions.

CO 11. Understanding the functions and workings of file handling, its types.

CO 12. Introduction to database handling.

CO 13. Creating and establishing database connections.

CO 14. Performing basic database operations.

CO 15. Information on setting query parameters.

COURSE OUTCOME

Course: Linux (Elective course) **Paper Code:306 C (Theory)**

CO 1. Understand the architecture and basics of UNIX operating system.

CO 2. Know about Open Source Software Systems.

CO 3. Understand the architecture and basics of Linux Operating system.

CO 4. Understand the Linux working environment.

CO 5. Understand the usage of various commands related to file and data handling, arithmetic operations, redirection and piping.

CO 6. Know user and administration specific operations through inbuilt commands on command line interface.

CO 7. Understand key system processes like booting, login, shutdown and user management in Linux.

CO 8. Learn steps of installing Linux and handling dual operating systems in one computer.

CO 9. Understand Linux file system and file permissions as per the security requirements of files and directories.

CO 10. Know how to work in vi Editor.

CO 11. Learn the concepts and syntax of Shell Programming and how to create shell scripts.

COURSE OUTCOME

Course: Networking Laboratory **Paper Code: 307 (Practical)**

CO 1. Understand fundamental underlying principles of computer networking.

CO 2. Understand details and functionality of layered network architecture.

CO 3. Apply mathematical foundations to solve computational problems in computer networking.

CO 4. Analyze performance of various communication protocols.

CO 5. Compare routing algorithms and it functions.

CO 6. Practice packet /file transmission between nodes through.

COURSE OUTCOME

Course: Java Laboratory **Paper Code: 308 (Practical)**

CO 1. Installing Java and understanding Java Development Kit (JDK).

CO 2. Identify classes, objects, members of a class and relationships among them needed for a specific problem.

CO 3. Develop Java application programs using OOP principles and proper program structuring.

CO 4. Demonstrate the concepts of polymorphism and inheritance.

CO 5. Write Java programs to implement error handling techniques using exception handling.

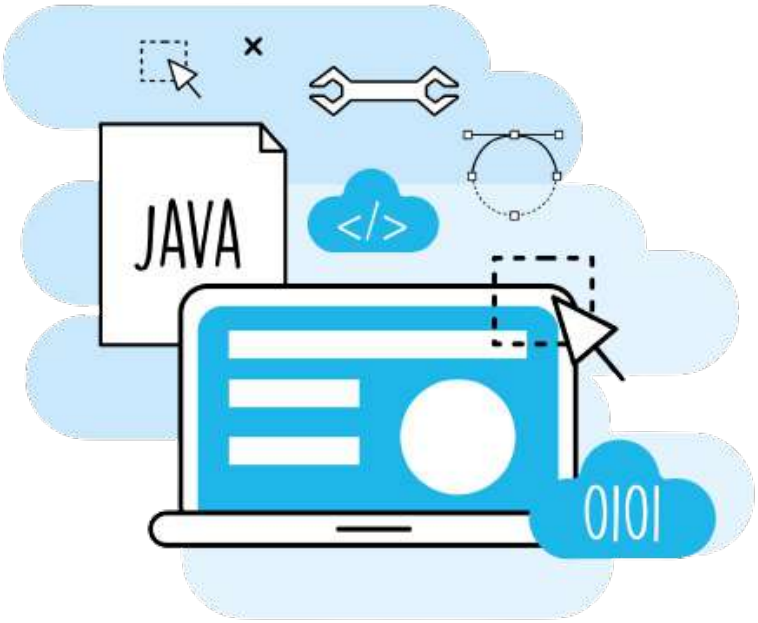
CO 6. Implementation of AWT based effective GUI.

CO 7. Create Applets and Implement Multithreading.

CO 8. Practical Programs related to Applets and Thread Management in Java.

CO 9. Implementing URL class and its usage through connection.

CO10. Use and create packages and interfaces in a Java program.



COURSE OUTCOME

Course: PHP (Elective course) **Pape Code: 309B (Practical)**

CO 1. Introduction to PHP.

CO 2. Programs on server-side scripting and client-side scripting.

CO 3. Practical understanding of the data types, syntax.

CO 4. Programs on decision making statements, iterations.

CO 5. Programs on arrays and its types.

CO 6. Programs on the concept of strings.

CO 7. Programs on various functions performed on strings.

CO 8. Programs on functions, its types, arguments.

CO 9. Programs on form handling.

CO 10. Programs on exception, try catch.

CO 11. Program on file handling operations.

CO 12. Programs on database handling.

CO 13. Programs on creating and establishing database connections.

CO 14. Programs on performing basic database operations.

CO 15. Programs on setting query parameters.

COURSE OUTCOME

Course: Linux (Elective course) **Paper Code:309 C (Practical)**

CO 1. Able to recognize the booting and interface of Linux operating systems.

CO 2. Able to work in a Linux environment.

CO 3. Able to execute and test commands related to file and data handling, arithmetic operations, redirection and piping.

CO 4. Execute user and administration specific operations.

CO 5. Execute shutdown and user management specific commands.

CO 6. Able to install Linux and handle dual operating systems in one computer.

CO 7. Able to modify file permissions of files and directories

CO 8. Able to open and work in different modes of vi Editor.

CO 9. Able to use the commands of vi editor.

CO 10. Able to create and execute shell scripts.

CERTIFICATE COURSES AND ADD-ON COURSES

Bridge Course in Basics of Computers
Session 2021-22

"Basics of Computers" **is a bridge course which has been designed for the non-IT students from different streams like arts/science/commerce and were not having Informatics Practice (IP) as subject in school education. This training reduces the gap between the schooling and college and was useful for the students to get knowledge in their subjects and to know college rules and regulations. The students will be given basic training on their computer subjects included in I Year. The basic knowledge in the subjects such as Computer fundamentals will be enhanced in the student's study group.**

Course Outcomes

- **To understand and study the history and basics of computer programming.**
- **To understand and study internet operations and basic protocols of networking.**
- **To understand and study web designing basics.**
- **Understand the basic working process of an operating system.**
- **Understanding and examine the structure of various number systems and its application in digital design.**
- **Analyse a web page and identify its elements and attributes.**

Bridge Course in Basics of Computers
Session 2021-22

"Basics of Computers" **is a bridge course which has been designed for the non-IT students from different streams like arts/science/commerce and were not having Informatics Practice (IP) as subject in school education. This training reduces the gap between the schooling and college and was useful for the students to get knowledge in their subjects and to know college rules and regulations. The students will be given basic training on their computer subjects included in I Year. The basic knowledge in the subjects such as Computer fundamentals will be enhanced in the student's study group.**

Course Outcomes

- **To understand and study the history and basics of computer programming.**
- **To understand and study internet operations and basic protocols of networking.**
- **To understand and study web designing basics.**
- **Understand the basic working process of an operating system.**
- **Understanding and examine the structure of various number systems.**
- **Analyse a web page and identify its elements and attributes.**

Bridge Course in Basics of Mathematics
Session 2022-23

BCA is a professional course that welcomes students from all streams. Therefore, the department offers a bridge course of Basic Mathematics for the non-mathematics-based students so that they can explore the knowledge and be at par with the mathematics based-students. The bridge course is generally conducted before the beginning of the regular classes. This helps the non-mathematics-based students to have a clear understanding of the basic and fundamental concepts of mathematics. The bridge course also helps the students in learning the IT-based concepts which are building blocks of mathematics. This concept building is needed for the efficient learning of subjects like Discrete mathematics in BCA.

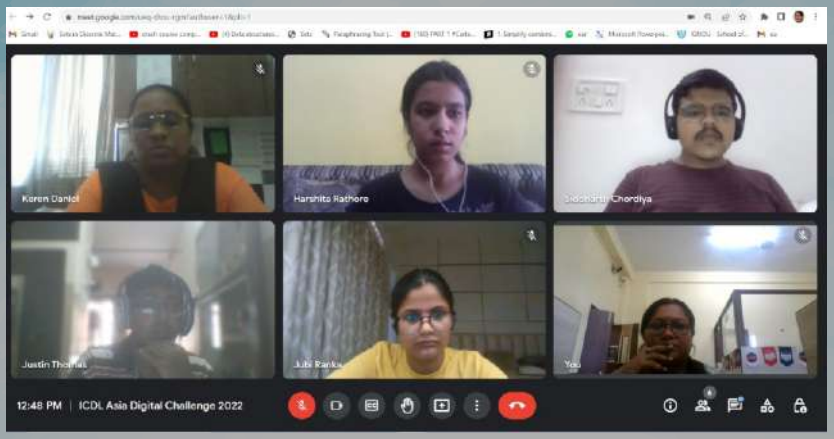
Course Outcomes

- **Develop a level of confidence among non-math students**
- **Help the non-math students to clear their doubts regarding math's**
- **Help the students to revise the basic concepts.**
- **Create a strong foundation to apply the concept of Math's**
- **Removes the fear of students from a non-math background**
- **Help the students to analyze the relation between Mathematics and Computer Science**
- **Develop logical thinking**

Web App Development using Python Web Framework- Django

Web App Development using Python Web Framework- DjangoThe Certificate Course of Django is conducted by Centre from FUTURO FOCUS, Chennai which is held every year for the BCA students. The students are guided and monitored by Prof. Saravana Kumar (Director of Futuro Focus). The aim of this course is to know how to develop a web page. After the completion of the course a 15-day rigorous internship is offered where the students are asked to develop a mini project using python framework Django. Over the past few years Mr Saravana Kumar has dedicatedly delivered his knowledge to us and has helped the students in their doubts session regarding their project. In the course outcome, the students learned about Python, HTML, CSS, and Django.

International Computer Driving License (ICDL) Certificate Course



ICDL programmes are for anyone who wishes to become fully competent in the use of a computer and common applications. Computer skills enable people of all ages to understand and use technology to improve their personal and professional lives. ICDL modules provide a practical programme of up-to-date skills and knowledge areas which are validated by a test. ICDL Foundation is a Global Social Enterprise dedicated to raising digital competence standards in the Workforce, Education and Society. ICDL Certification is now available in over 100 countries, across the network of more than 20,000 Test Centres, delivering over 70 million ICDL Certification Tests to more than 16 million people worldwide. ICDL Certification is managed by four regional offices; ICDL Asia based in Singapore, ICDL Africa based in Rwanda, ICDL Europe based in Belgium and ICDL Americas based in Panama. It is an international organization dedicated to raising digital competence standards in the workforce, education and society .

ESSENTIAL SKILLS

- **Application Essential module develops essential skills to use workplace applications effectively.**
- **Computer Essentials module covers the main concepts and skills needed for using devices, computers, ICT, and software effectively.**
- **Computer and Online Essentials module covers the main concepts and skills needed to use the internet and email – including web browsing, effective information search, and online communication.**

Data Visualization using Python

Futuro-Focus is a team of professionals from (Academics and the IT Industry), they work in tandem creating new courses and mentoring young engineering students in latest technologies. After extensive research, they have correlated and created our technology training modules, it will give a better understanding of regular academic syllabus with relevance to present and future industrial requirements. They highlight and introduce futuristic technologies to students during our training sessions, this will help them to choose their career and technical domain wisely. Their hands-on training modules are utilized by IT Companies to train their fresh recruits, various academic institutions use our hands-on course modules to train their students in a practical way. All their examples in our training modules, for discussion and practice will be based on real-time scenarios. The course will include following topics:

Python Overview, Variables, statements, expressions, Python Data Types / Data Structures, Strings and String Manipulation, List, Tuples, Sets, Dictionary and operations, Type Casting (Implicit and Explicit), Decision Making Statements, Looping Statements, Built in Functions, User Defined Functions, User Defined Modules, Python Modules

Mentor-Mentee System

On the occasion of National Mentoring Day on October 27, 2022, the Department of Computer Science launched the Mentoring Programme for students in all classes of the BCA Course, with the goal of developing, maintaining, and improving their overall performance. The program's goal was to mentor students in order to develop a high-performance cadre of leaders who will inspire and encourage others to accomplish productive and sustainable results in society. As a result, all students were designated mentors to guide them throughout the session in all aspects of life and work. Throughout the session, the mentors upheld high standards of honesty, integrity, trust, openness, and respect, instilling the same level of values in all pupils.

Alumni Interaction Program 1-

"Networking Opportunities and Career Advice"

A Step in the Right Direction: At St Xavier's College Jaipur, Department of Computer Science hosted an Online Career Development session on the theme "Building a Successful Career" on 9th September, 2022 Mr. Shubham Sharma – Command Centre Manager in AU Small Finance Bank. The session started by warm welcome with saplings then the Alumni interacted with the students and gave motivational talk regarding preparing for higher studies and placements. Students asked many questions regarding placements and the alumni shared their views. The alumni motivated each one of us presented there. It was a very interactive session overall. The technical team presented 2 videos which were played during the session one was the introduction video the another was full of memories of the alumni's. The token of gratitude was presented by the teachers of the computer science department. The session coordinators were Ms. Pushpanjali Saini and Dr. Dharmveer Yadav, and emcees were Mahee Sarawgi (BCAIII) and Kratika Soni (BCAII). The whole session was very informative and interesting and ended up with group photograph.

Alumni Interaction Session 2-
"Building Meaningful Relationships with Students and Alumni for Career Guidance and Progression"

The Department of Computer Science, at St. Xavier's College Jaipur organized *"Alumni Interaction Session- Building Meaningful Relationships with Students and Alumni for Career Guidance and Progression"*, a programme to facilitate, consolidate and coordinate Alumni Activities at St. Xavier's College in conference room on 9th September 2022. The alumni interaction is to reconnect with the Alumni and celebrate their success and various achievements. The alumni for the session were Mr. Anil Karwa – Tech lead at MLE SYSTEMS, Jaipur. The session started by warm welcome with saplings then the Alumni interacted with the students and gave motivational talk regarding preparing for higher studies and placements. Students asked many questions regarding placements and the alumni shared their views. The alumni motivated each one of us presented there. It was a very interactive session overall. The technical team presented 2 videos which were played during the session one was the introduction video the another was full of memories of the alumni's. The token of gratitude was presented by the teachers of the computer science department. The session coordinators were Ms. Pushpanjali Saini and Dr. Dharmveer Yadav, and emcees were Mahee Sarawgi (BCAIII) and Kratika Soni (BCAII). The whole session was very informative and interesting and ended up with group photograph.

INFRASTRUCTURE DETAILS

CLASSROOM

LIBRARY

LAB

INFRASTRUCTURE DETAILS

CONFERENCE ROOM

STUDIO

AUDITORIUM

INFRASTRUCTURE DETAILS

STAFFROOM

CORRIDOR

CANTEEN

TECH-X HIGHLIGHTS

Digital Literacy Week

The Department of Computer Science and Tech-X Club, St. Xavier's College Jaipur in collaboration with Unnat Bharat Abhiyan (UBA) Cell and Cyber Security Cell organized Seven days "DIGITAL LITERACY WEEK from 8th Feb to 16th Feb 2023. The program teacher coordinators were Ms Keren Lois Daniel (Head, CS), Ms. Pushpanjali Saini and Ms. Ritu Sisodia. The program aimed to spread digital literacy awareness and promote educational skills to the students of Jaipur Green School, Jaisinghpura. The students of Computer Science Department under the guidance of teacher taught 50 students of Jaipur Green School.

The first day of the program started with a riveting interaction with the students which filled them with full enthusiasm. An entry test was taken to examine students' knowledge. The topic for the 1st day was "Basics of Computers", in which basic concepts of computers, input-output devices along with their importance were explained. Topic for day 2 was "MS Word" and its various features. Topic for day 3 was "MS Paint", which revived the students with its exciting features along with a small digital painting competition which was organized to proliferate their creative imagination. Topic for day 4 was "Networking", which consists of its practical usage in daily life. Day 5th and 6th comprised "Awareness on Cyber Security and Cyber Crime". Topic for day 7 was "Useful Apps and Websites", in which usage of useful apps and websites (on daily basis) was thoroughly explained. Each session ended up with a Q&A session.

On the 8th day, the program ended up with a closing ceremony, which started with a group photograph with the Principal, Vice principal, department faculties, entire workforce, and all the students. The ceremony continued with a warm greeting to the fathers and all the staff members. Appreciation certificates were distributed by Rev Father Dr A Rex Angelo SJ, Principal, and Rev Father Raymond Cherubin SJ, Vice Principal to all the students. An exit test was conducted to analyse students' academic performance. At the last, a vote of thanks was given to the management, workforce, and students for the great success of the event.

Workshop on: Cyber Security Awarness

Department of computer science and Cyber Security Cell, St. Xavier's College Jaipur, organized a workshop on Cyber Security awareness on 30th November, 2022 from 10:00 am in online mode. Rev Fr A Rex Angelo SJ, the Principal of the college addressed the participants and motivated them to get aware of different cyber crimes and security techniques. The event was witnessed by 152 students and two guest speakers shared their expertise on the Cyber security and Ethical Hacking.

First Guest Speaker, Dr. A Vimala, Associate Professor, Dept of Computer Science, Fatima College (Autonomous), Madurai moderated the session & shared the key aspects of cyber security measures which are designed to combat threats against networked systems and application. Cyber security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks. She also elaborated a Checklist of how to stay safe in cyberspace.

The second Guest Speaker, Ms. S. Mary Helan Felista ,Assistant Professor, PG Dept. of Computer Application, Fatima College (Autonomous), Madurai highlighted the Ethical Hacking in Cyber Security. She also put some light on ethical hacking which involves an authorized attempt to gain unauthorized access to a computer system, application, or data. Carrying out an ethical hack involves duplicating strategies and actions of malicious attackers. This practice helps to identify security vulnerabilities which can then be resolved before a malicious attacker has the opportunity to exploit them.

The session was very beneficial to all our students as the new horizons of Cyber Securities were revealed. The high spirit and enthusiasm of the entire organizing team have made the workshop successful in the Computer Science Department of St. Xavier's College Jaipur.

Department Orientation 2022-2023

The Department of Computer Science of St. Xavier's College, Jaipur organized an orientation programme for the first-year students on September 22, 2022, in Conference Hall, 2:45 P.M. onwards. The programme was conducted in the conference hall in the college which gave which led to conventional execution of the programme. The program coordinators were Dr Madhu Sharma and Ms Pushpanjali Saini. The programme started with a brief introduction about the departmental event and the heartiest welcome of our respected faculty members as well as our beloved freshers.

The freshers were made familiar with the college management and the department faculties. The departmental video was displayed which filled everyone's heart with elation and unity. Followed next, was a welcome address by HOD Ms Keren Louis Daniel. Next, a brief description of the session 22-23, after which the scholarship holders from the last year batches were welcomed on the platform to share their merits. Then our esteemed college principal Rev Fr Dr A Rex Angelo SJ shared some words of wisdom and cultivating ideas. The departmental magazine "tech X Zine" was also set forth. After this, an interactive session was conducted among all the students which created a hype in the hall and filled everyone with enthusiasm. After having this session filled with laughter, BCA core council was declared. The programme was concluded by the vote of thanks by the CR's of second year.

Educational Visit at Bhamashah Techno Hub

Department of Computer Science in collaboration with Innovation & Incubation Cell (IIC), organised a 2-day Educational Visit to Bhamashah Data Center and Bhamashah Techno Hub, Department of Information Technology (DoIT), Jaipur, Rajasthan on 13 th - 14th October 2022.

The students (strength:80) along with Computer Science Faculty, Dr Vaishali Singh and Ms Keren L Daniel (Head, CS) visited the Bhamashah Techno Hub, (Incubation centre, ISTART, DOIT, Government of Rajasthan), Jhalana Doongri, Jaipur .

At the Bhamashah Techno Hub, the BCA students and IIC students were received and addressed by different mentors and startup owners. The mentors gave a presentation to the students regarding the ISTART program run by the Government of Rajasthan for Entrepreneurs & Startups. After the presentation, the mentors Conducted a Q & A round, where the students were advised regarding the building up of their ideas.

Bhamashah techno hub is a project by the Government of Rajasthan. The idea is to provide an entire support system to the rising entrepreneurs by helping them to pitch their ideas and to connect them with the potential investors. The incubation centre offers free space, connectivity, easier funding, mentorship and exposure to the startups. Inspite of experiencing the fun of various technologies like Virtual Reality, Microsoft Hololens and many more, students also got an additional information about ‘What is i-start’, funding etc.

The mentors also advised about the role of Experts in helping the students in developing their ideas and making them viable and the ease of getting the funds for running a startup directly from the government with minimal formalities. The students participated with great enthusiasm and raised several queries regarding Entrepreneurship Start-up funding and the formalities required to be fulfilled for launching a start-up. The students also visited the Co-working space allocated to the start-ups.

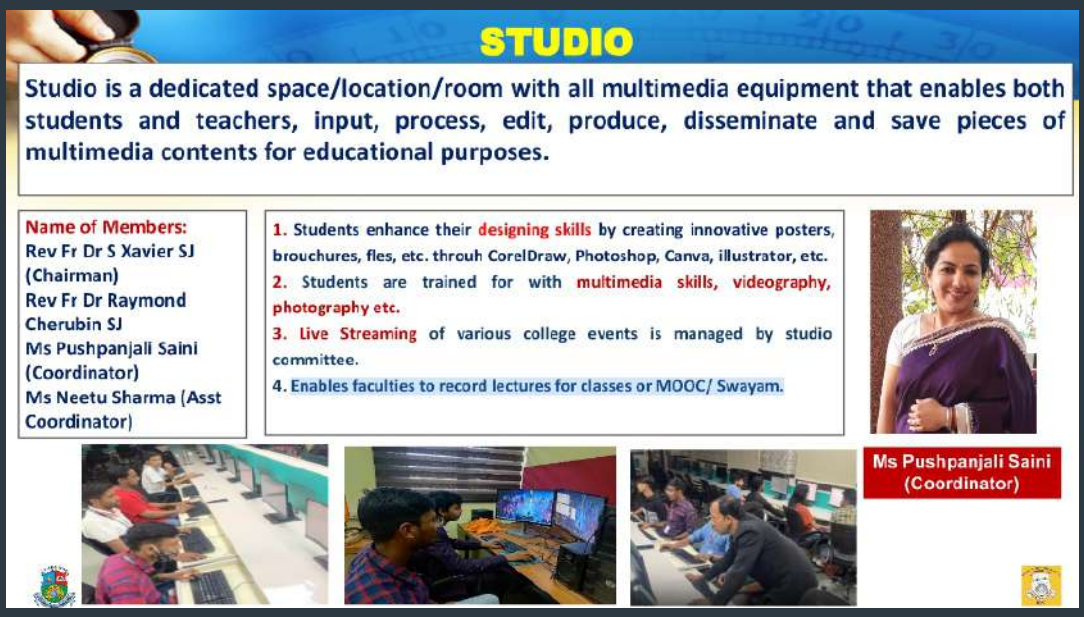
Department Trip
Birla Water Park, Ajmer

One day trip was organized by the Department of Computer Science for the students on October 7 , 2022 to visit Birla Water Park. at Ajmer in the state of Rajasthan. The tour comprised students of BCA of all the years accompanied by faculty members, Ms. Keren L Daniel, Dr Vaishali Singh, Ms Pushpanjali Saini and Ms. Ritu Sisodia. of Computer Science. All the students were directed to gather at the College Campus in City at Hathori Fort Road at 8.00AM. Principal of the college Rev Fr Dr. A.Rex Angelo , SJ wished all the students best and safe journey. We started our journey at 9 o'clock with Shama Travels Service and reached at 12: 50 PM at the location.

The Campus incharge warmly welcomed all of us. Tea and snacks were served to all guests. After that all students along with faculty members were taken to the site, where the water park was installed..The Students were allowed to go into all the different water channel outlets. The water park had a man-made water supply that was channelized to fall from a suitable height (about 20 to 50) to rotate the turbine. Primarily the concept was taken to make traditional water fall and further extended to generate a sea wave experience using electricity. The tour was a delightful experience for all.

Studio

Studio is a dedicated space/location/room with all multimedia equipment that enables both students and teachers, input, process, edit, produce, disseminate and save pieces of multimedia contents for educational purposes. Students enhance their designing skills by creating innovative posters, brochures, flex, etc. through CorelDraw, Photoshop, Canva, illustrator, etc. Live Streaming of various college events is managed by studio committee. Enables faculties to record lectures for classes or MOOC/ Swayam.



Vaccination Camp

The department of Computer Science of St Xavier's College Jaipur in collaboration with World Vision organized a Vaccination Camp on campus on July 30, 2022 to fight against COVID-19 on the eve of Golden Jubilee Celebration of St Ignatius of Loyola . This vaccination drive was a success where the participants were vaccinated to be secured against the deadly Corona Virus. More than 200 got themselves benefited from the vaccination drive by getting vaccinated from the age group of 12yrs and above. The drive was a success under the mentor ship of Rev Fr Dr A Rex Angelo SJ, Principal of the college and Dr Josiah Daniel, Manager – World Vision.

Cyber Security Awarness Program

It's an immense pleasure to present to you all an E-newsletter "Gadg-ette", an initiative taken under the Cyber Security Awareness Program in October by the Department of Computer Science in collaboration with Xavier Cyber security cell and Tech-X (IT Club) designed by BCA II students under the creative study of paper code-210(Multimedia Paper).

The primary objective of the new initiative is to provide a platform for BCA students to showcase their design skills and to give them exposure to a wide audience. The newsletter intends to act as a communication tool that will aim to investigate the students' awareness of basic knowledge of cybersecurity and to elevate awareness, cybersecurity needs to become a "security culture" both at work and an individual level.

Technoid'22

The Department of Computer Science at St. Xavier's College Jaipur organised exhilarating college fest, "Technoid: Transcending Horizons - Tech-It to the Future," on November 16, 2022. This event aimed to celebrate the ever-evolving world of technology and computer science while fostering creativity and innovation among the participants. The following report provides an overview of the fest, including its theme and a detailed description of the various events that took place throughout the day. The theme for "Technoid" in 2022 was "Transcending Horizons - Tech-It to the Future." This theme was carefully chosen to reflect the department's dedication to embracing the future of technology and encouraging students to envision and create the technological landscape of tomorrow.

Fest Highlights:

Inauguration Ceremony: The emcees for the inaugural ceremony were Divyanshu Pareek and Aishwarya Biju, who brought energy and enthusiasm to the event. The fest commenced with a grand inauguration ceremony held in the morning, attended by faculty members, students, and esteemed guests. The event began with the revered presence of our Rev. Fathers, who addressed the gathering and shared their insightful thoughts on the importance of technology in today's world. A captivating performance by the Cultural Committee in the form of a Robo Dance left the audience spellbound. It perfectly embodied the fusion of technology and art, setting the stage for a day of innovation and creativity. Following this, the "Tech Talk" event featured prominent experts, Dr C B Sharma, IPS (R), and Mr. Chandan Sen, who engaged in an enlightening discussion moderated by Rev Fr Dr A Rex Angelo SJ, the Principal of the college. Their insights and experiences inspired the attendees and motivated them to reach for greater heights in the field of technology. The inaugural ceremony culminated with the unveiling of "X-TechZine" and the official declaration of "Technoid 2022," officially marking the beginning of the fest.

The fest offered a wide array of events, catering to diverse interests and talents:
Gamers League (Gaming): An intense gaming competition that brought together avid gamers to showcase their skills and strategic prowess. Tech Walk (Fashion Show): A unique fusion of fashion and technology, where participants combined fashion and innovation to present futuristic concepts. Retro Run (Gaming): A nostalgic journey through classic video games, giving participants a chance to relive the past. Technoid Premier League (TPL): A high-stakes competition in various tech-related disciplines, testing participants' knowledge and skills. CodeSmash (Debugging): A coding competition where participants had to debug complex programs and algorithms. RoboIgnitors (Robotic): A robotics competition challenging teams to design and build robots to complete specific tasks. Unlock-It (Tech Quiz): A quiz that tested participants' knowledge of the latest technology trends and innovations. Articisie (Graphic Designing): A platform for creative minds to showcase their graphic designing skills. Pexels (Online Photography): An online photography contest, encouraging participants to capture the essence of technology in their photos. Origination (Product Launch): An opportunity for aspiring entrepreneurs to launch and present their tech-based products.
y and nurturing the future leaders of the tech industry.

Closing Ceremony: The closing ceremony was hosted by Devendra Singh Rathod and Shreya Sharma, who ensured the fest concluded on a high note. The fest concluded with a spectacular closing ceremony in the evening, presided over by the General Secretary as the rapporteur. The highlight of the evening was the prize and certificate distribution, recognizing the outstanding achievements of participants throughout the day. The President delivered a heartfelt vote of thanks, expressing gratitude to all participants, sponsors, and organizers who made "Technoid 2022" a remarkable success. The event concluded with a group photograph, capturing the memories of a day filled with technological marvels and creative endeavours.

"Technoid: Transcending Horizons - Tech-It to the Future" was a resounding success, showcasing the innovative spirit and technical prowess of the students at St. Xavier’s College Jaipur. The fest not only provided a platform for learning and competition but also fostered a sense of camaraderie and excitement among all participants. It served as a testament to the department's commitment to staying at the forefront of technology and nurturing the future leaders of the tech industry.

Technoid'22
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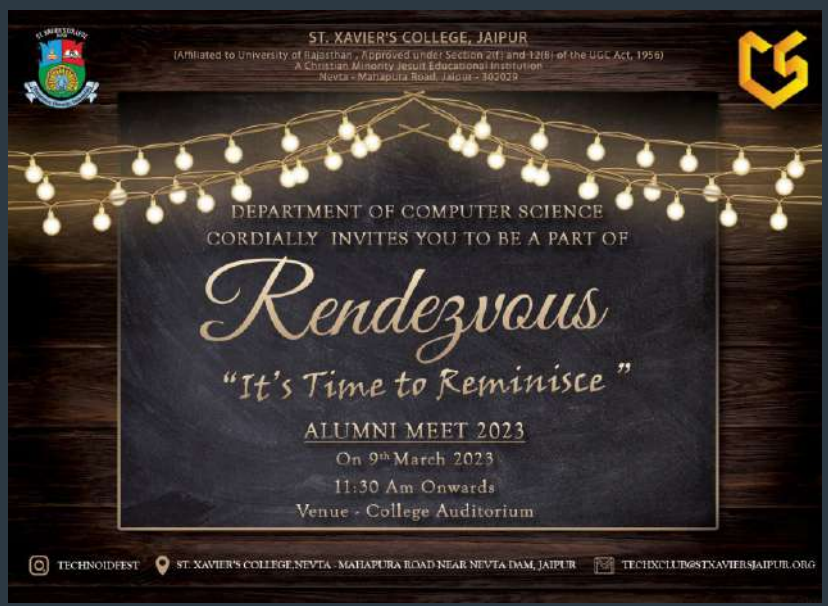
Alumni Meet Rendezvous:

It's Time to Reminisce

College is a brand-new universe where you can discover many different incarnations of who you are. During those years, you fell and yet were reborn. You got bored with yourself occasionally or decided to pamper yourself a little more. Amid all of this, you ran into helpful and lifelong cherished mentors and friends.

Let's go back in time and take a stroll down memory lane. Highflier, from nostalgic games to immersing tales, the Department of Computer Science at St. Xavier's College Jaipur, had made all the arrangements for the Alumni Meet 2023 that happened on the 9th of March. It was time to reflect on this "RENDEZVOUS." It was time to reminisce.

The Department of Computer Science, in collaboration with Tech-X Council, conducted an exhilarating event with the mesmerizing presence of department alumni. Vice Principal of St. Xavier's College Jaipur, Rev. Fr. Dr. Raymond Cherubin, graced the event with his presence. Music and dance performances, the games, and the bestowal, which were followed by lunch, made the event a blast.



Department Highlight Outcome Publication (X-Techzine)

In today's dynamic eco-sphere, technology plays a vital role in every area of life and society of its ascendant movement. The Department of Computer Science has taken up the responsibility of accelerating this movement through its Annual Magazine X-Techzine.

The key objective of the department magazine is to make students understand the presentation of the creativity, experiences, and the ongoing elevations of the technical world.

The magazine offers a platform for the students to express their writing and presentation skills. It also hones the technical illustrative abilities of the students by providing the opportunity to design it fully and bring it into an exhibiting asset.

Department Research Outcome Publication (Informatica)

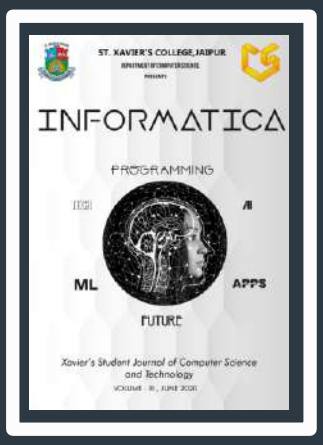
Research is to see what everybody else has seen and to think what nobody else has thought."

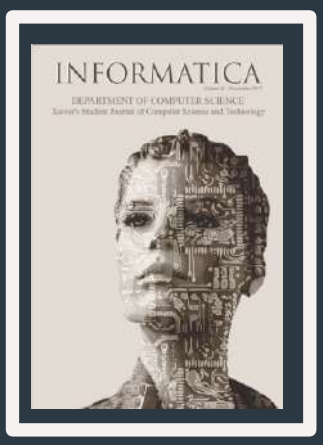
- Albert Szent Gyorgyi

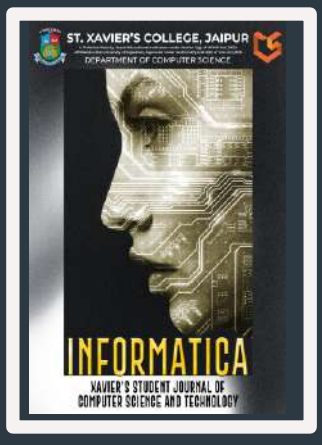
Research is a common activity which is required in all disciplines and pursuits to match pace with the ever-changing world. It has the power of finding solutions to the real life's problems in a systematized and formalized manner, which further sets the model for the rest of the world. The Department of Computer Science always aims to provide opportunities to the students to explore their potential in research and development along with their academic pursuits. To fulfil the objective of imparting practical knowledge and utilizing it in the field of research and invention, the Department of Computer Science has introduced the annual department Journal.

Social Engagement

The ISREAC /UBA Programme of the College offers a unique opportunity to students to engage themselves across several communities in around the college vicinity. student engagements are considered important at Xavier's not only because of their relationship with student learning system but also represent a disposition towards society that are marginalised and ain a life-long learning experience in sharing and caring as humans. The students of our department are extremely enthusiastic in working for the underprivileged. They helped in training students in the slums of the most backward part of Jaipur near Shastri Nagar which is situated in heart of the city. With their digital literacy they help in collecting the survey details through digital techniques. They have a deep sense of belongings towards the deprived.







ALUMNI SNAPSHOTS

ARTICLES

The future of E-Sports in India : A Bright Horizon Beckons

-By Sushant Xavier Andrew

In recent years, India has witnessed an exponential growth in the world of esports, marking a paradigm shift in the nation's entertainment landscape. As digital connectivity deepens and gaming culture gains prominence, the future of esports in India appears promising, holding immense potential for further expansion and recognition.

One of the driving factors behind the surge in esports popularity is the widespread accessibility to high-speed internet and affordable smartphones. This digital revolution has enabled millions of Indians to engage in online gaming, fostering a massive player base across various titles like PUBG Mobile, Call of Duty Mobile, and Valorant. The competitive nature of esports, coupled with the allure of professional gaming, has captivated the nation's youth, giving rise to a generation of skilled players who aspire to make a career in this domain.

"This digital revolution has enabled millions of Indians to engage in online gaming, fostering a massive player base across various titles like PUBG Mobile, Call of Duty Mobile, and Valorant."

Several developments substantiate the notion that the future of esports in India is destined for success. Major international tournaments have taken notice of the Indian talent pool, leading to increased participation and recognition on the global stage. Investment from various stakeholers, including both local and international organizations, has injected vitality into the ecosystem, fostering infrastructure development, sponsorships, and professional leagues.

The establishment of dedicated esports leagues, akin to traditional sports leagues, has played a pivotal role in legitimizing esports as a credible profession.

These leagues not only offer substantial prize pools but also create a structured pathway for aspiring gamers to progress from amateur to professional levels. These leagues not only offer substantial prize pools but also create a structured pathway for aspiring gamers to progress from amateur to professional levels. Additionally, the formation of esports teams and academies has provided a platform for nurturing talent and honing skills, contributing to the overall growth of the industry.While the growth trajectory is promising, challenges persist. The perception of gaming as a legitimate career choice remains a hurdle in many households.

However, as more success stories emerge, showcasing lucrative opportunities and substantial earnings, these stereotypes are gradually eroding. Moreover, the industry faces the task of maintaining a healthy ecosystem, addressing concerns about excessive screen time and fostering inclusivity and diversity within the gaming community

.In conclusion, the future of esports in India appears to be on a positive trajectory, fueled by technological advancements, growing investor interest, and a burgeoning player base. As the industry continues to mature, collaboration between stakeholders, effective infrastructure development, and public awareness campaigns will be essential to ensure a balanced and sustainable growth. With these elements in place, esports in India is set to become a mainstream phenomenon, reshaping the way both participants and spectators engage with digital entertainment.

"The future of esports in India appears to be on a positive trajectory, fueled by technological advancements, growing investor interest, and a burgeoning player base."

Unleashing the Power of 5G: Advantages and Transformative Potential

By- Kshitij

In terms of connection and communication, the fifth generation of mobile network technology, or 5G, has emerged as a game-changer. The way we connect with the digital world is about to undergo a change thanks to 5G, which offers ultra-fast data rates, reduced latency, higher capacity, and improved dependability. This essay examines the amazing benefits of 5G and how it is laying the foundation for a more technologically advanced and interconnected future.

The amazing data transmission speeds of 5G are one of its biggest benefits. Speeds up to 100 times faster than 4G are possible with 5G technology, which uses millimetre waves and higher radio frequencies to function. With 5G, downloading big files, streaming HD films, and using cloud services will all happen practically instantly.
The faster speed is advantageous for corporations and industries as well as for individual users. Faster data rates allow for seamless real-time communication, which boosts productivity in industries including manufacturing, logistics, transportation, and healthcare.

With 5G, latency—the amount of time it takes for data to go from a source to a destination—is much decreased. When engaging with apps and services, 5G networks' ultra-low latency, which is often in the range of 1 millisecond or below, guarantees a nearly immediate response.

For technologies like virtual and augmented reality, driverless cars, remote surgery, and the Internet of Things (IoT), real-time communication is essential. Low latency, for instance, makes it possible for autonomous cars to quickly interact with one another and roadside infrastructure, improving safety and facilitating efficient road coordination.
Third, Widespread Device Connectivity
A large number of linked devices may be supported by 5G in a given region. The growing adoption of IoT devices, smart cities, and smart households will require this increase in capacity. Innovation will be sparked by 5G's capacity to manage thousands of linked devices at once in a number of industries, including healthcare, agriculture, energy management, and public services.

The design of 5G networks prioritises robustness and redundancy. To strengthen the signal and lessen interference, the system makes use of sophisticated beam forming and multiple-input, multiple-output (MIMO) technologies. This improves everything else especially in busy regions, the network's dependability and stability.
A combination of low, mid, and high-band frequencies will be used in the implementation of 5G, improving coverage in both urban and rural areas. More individuals will be able to access high-speed internet and take advantage of the advantages of the digital age thanks to this expanded coverage.

Beyond better smartphone connection, 5G has enormous possibilities. This game-changing technology acts as a catalyst for the expansion and creation of cutting-edge services and applications. Remote robotic surgery, ultra-high quality virtual reality, and immersive augmented reality applications are all made more practical with 5G.

In addition, businesses may use the reduced latency and expanded capacity to implement sophisticated automation, intelligent infrastructure, and data-driven decision-making procedures. This will result in greater effectiveness, lower operating expenses, and a considerable improvement in output across several industries.

A significant advancement in technology, 5G has the potential to drastically alter the course of human history. The benefits of 5G, including its potential to accelerate technical developments, huge device connection, ultra-low latency, lightning-fast data rates, and better dependability, will spur innovation and change the way businesses operate as well as how people live and work.
As with any ground-breaking technology, 5G will need a strong infrastructure, legislative backing, and attention to privacy and security issues in order to be implemented and widely adopted. 5G will surely pave the way for a more connected, effective, and inventive society once these issues are resolved.

"5G will surely pave the way for a more connected, effective, and inventive society once these issues are resolved."

Bitcoin in the Modern Era : A Digital Revolution

-By Saloni Soni

"The future of Bitcoin remains both exciting and uncertain."

In today's rapidly evolving digital landscape, cryptocurrencies have emerged as a groundbreaking technological innovation, with Bitcoin leading the charge. Since its inception in 2009, Bitcoin has transformed the financial world, challenging traditional financial systems and captivating the imagination of individuals, investors, and institutions alike. As we stand on the cusp of a new era, let's explore the current state of Bitcoin, its impact on the global economy, and its potential for the future.

As of today, Bitcoin remains the most valuable and widely recognized cryptocurrency. Its market capitalization and price have witnessed significant fluctuations over the years, reflecting the volatile nature of the cryptocurrency market. While the early years saw Bitcoin as a niche asset, it has now gained mainstream acceptance and is considered a legitimate investment vehicle. The demand for Bitcoin is driven not only by individual investors but also by institutional players who have recognized its store of value attributes and potential as a hedge against inflation and economic uncertainty. The impact of Bitcoin on the global economy is multifaceted. Firstly, it has introduced a decentralized financial system that operates independently of central authorities. This characteristic grants individuals greater financial autonomy and control over their wealth. Secondly, Bitcoin has the potential to revolutionize cross-border transactions. Traditional international remittances are often slow and expensive, burdened by intermediary fees. Bitcoin's decentralized nature and blockchain technology enable faster and cheaper cross-border transfers, allowing individuals to bypass traditional financial institutions and reducing friction in the global economy.

Furthermore, Bitcoin has provided a gateway for millions of unbanked individuals worldwide to access financial services. In regions with limited banking infrastructure, cryptocurrencies like Bitcoin offer a lifeline to financial inclusion, empowering individuals to participate in the digital economy and access financial products and services. As Bitcoin's popularity continues to surge, regulators across the globe face the delicate task of balancing innovation with consumer protection and financial stability.

Governments are developing frameworks to monitor and regulate the cryptocurrency industry, aiming to safeguard investors and prevent illicit activities like money laundering and fraud. However, finding the right balance between fostering innovation and mitigating risks remains a complex challenge. Striking the right regulatory chord is crucial for ensuring the sustainable growth of the cryptocurrency market without stifling its transformative potential.

One of the most significant criticisms of Bitcoin today revolves around its environmental impact. Bitcoin mining, the process of validating transactions and adding them to the blockchain, requires substantial computational power. This has led to concerns about the energy consumption associated with Bitcoin mining, as it predominantly relies on fossil fuels in some regions. In response, the cryptocurrency community is actively exploring alternative consensus mechanisms, such as proof-of-stake, that are less energy-intensive. Additionally, there is a growing trend among miners and investors to support renewable energy sources to mitigate the ecological impact of Bitcoin mining.

The future of Bitcoin remains both exciting and uncertain. Technological advancements, evolving regulations, and the ever-changing market sentiment will continue to shape its trajectory. As the cryptocurrency market matures, Bitcoin may become more stable and gain wider acceptance as a medium of exchange for everyday transactions. Bitcoin's journey from obscurity to prominence has been nothing short of remarkable. Today, it stands as a symbol of financial innovation, sparking conversations about the future of money and challenging the status quo of traditional finance. As we move forward, it is essential for stakeholders to address concerns, promote responsible usage, and foster a conducive regulatory environment to unlock the full potential of Bitcoin's transformative power. Whether Bitcoin realizes its vision of a borderless, inclusive, and decentralized financial system remains to be seen, but its impact on the world is undeniable.

"Bitcoin has provided a gateway for millions of unbanked individuals worldwide to access financial services."

"It has introduced a decentralized financial system that operates independently of central authorities."

The Art of Developing a Website

-By Pawan Uttamchandani

"Website development involves various aspects, such as web design, web programming, web content, web security, web performance, and web accessibility."

The art of website development is the process of creating and maintaining websites that are functional, attractive, and user-friendly. Website development involves various aspects, such as web design, web programming, web content, web security, web performance, and web accessibility. Website development requires a combination of technical skills, creativity, and problem-solving abilities.Some of the skills and tools that website developers need are: HTML: HyperText Markup Language is the standard language for creating the structure and layout of web pages. CSS: Cascading Style Sheets is the language for styling and formatting web pages, such as colors, fonts, backgrounds, and animations.~ JavaScript: JavaScript is the language for adding interactivity and functionality to web pages, such as buttons, menus, forms, and games. PHP: PHP is a server-side scripting language that allows web developers to create dynamic and interactive web pages, such as blogs, e-commerce sites, and social networks.WordPress: WordPress is a popular content management system that allows web developers to create and manage websites easily, without coding.Bootstrap: Bootstrap is a framework that helps web developers create responsive and mobile-friendly websites quickly and efficiently.Website development is not only a technical skill, but also an artistic one. Web developers need to have a sense of aesthetics, usability, and user experience. They need to create websites that are appealing to the eye, easy to navigate, and engaging to the user. They also need to consider the purpose, audience, and goals of the website. Some of the principles and practices that website developers follow are:Simplicity: Web developers should avoid unnecessary complexity and clutter in their websites. They should use clear and concise language, consistent and intuitive design elements, and minimal graphics and animations.

-

Contrast: Web developers should use contrast to create visual interest and hierarchy in their websites. They should use different colors, sizes, shapes, and fonts to emphasize important information and guide the user's attention.
Balance: Web developers should use balance to create harmony and stability in their websites. They should distribute the visual weight of the elements evenly across the page, and avoid overcrowding or leaving too much white space.

Alignment: Web developers should use alignment to create order and organization in their websites. They should align the elements along a common edge or center line, and use grids and guides to ensure consistency and accuracy.
Repetition: Web developers should use repetition to create unity and coherence in their websites. They should repeat design elements, such as colors, fonts, icons, and logos, throughout the website to create a recognizable identity and style.

Proximity: Web developers should use proximity to create relationships and connections in their websites. They should group related elements together, such as headings, paragraphs, images, and buttons, to create logical sections and categories.

Website development is an art that requires constant learning and improvement. Web developers need to keep up with the latest trends and technologies in the field. They also need to test their websites regularly for errors, bugs, compatibility issues, and user feedback. They need to optimize their websites for speed, performance, security, and accessibility.

Website development is an art that can be rewarding and fulfilling for those who enjoy creating and maintaining websites. It can also be challenging and demanding for those who face difficulties or frustrations in the process. However, with enough practice, patience, and passion, anyone can master the art of website development.

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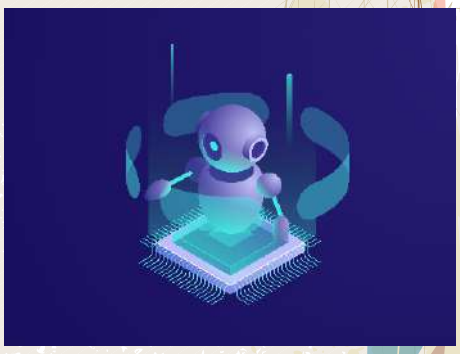
Restrictions of Artificial Intelligence

-By Joel C.Thomas



AI is a powerful technology that has the potential to revolutionize various aspects of our lives. However, it also comes with significant challenges and potential risks that need to be addressed. By restricting AI, we aim to strike a balance between harnessing its benefits and mitigating its potential drawbacks.

One crucial reason for restricting AI is the potential for misuse and abuse. As AI systems become more sophisticated, they can be exploited for malicious purposes, such as cyberattacks, misinformation campaigns, and autonomous weapons. By implementing regulations, we can minimize the risk of AI being weaponized or used to manipulate and harm individuals or society as a whole. Protecting privacy is another vital consideration. AI technologies often rely on vast amounts of data, and without proper controls, personal information can be collected and analyzed without consent. Restricting AI helps establish guidelines to safeguard user data, ensuring that it is used responsibly and ethically .moreover, fairness and accountability are significant concerns when it comes to AI. Bias can unintentionally be introduced into AI algorithms, leading to discriminatory outcomes in areas like hiring, lending, and criminal justice. Restrictive measures can enforce transparency and fairness in AI development, promoting systems that treat all individuals equitably.

Maintaining human control over AI decisions is crucial to avoid relinquishing power to machines. As AI becomes more autonomous and capable of making critical choices, ensuring human oversight is vital to prevent unintended consequences and protect against potential risks to human safety. Responsible AI regulation also fosters public trust and confidence in the technology. It reassures individuals that AI development is subject to ethical guidelines and that their concerns regarding AI's impact are being addressed.

However, it is essential to strike a balance when restricting AI. Overly stringent regulations could stifle innovation and hinder progress in areas where AI could be genuinely beneficial, such as healthcare, climate change research, and disaster response. In summary, restricting AI is necessary to manage its potential risks, protect individual rights, ensure fairness, and maintain human agency. By striking the right balance through thoughtful regulation, we can maximize the benefits of AI while minimizing its potential downsides. This approach promotes a more responsible and sustainable integration of AI into our society.AI is a powerful technology that has the potential to revolutionize various aspects of our lives. However, it also comes with significant challenges and potential risks that need to be addressed. By restricting AI, we aim to strike a balance between harnessing its benefits and mitigating its potential drawbacks.

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Argumented Reality :Bridging the physical & digital worlds

-By Shine Varghese & Shobhit Garg

Augmented reality (AR) is a progressive era that merges digital content material with the bodily environment, creating an immersive and interactive experience for users. By overlaying computer-generated snap shots, facts, and sensory improvements onto the real world, AR blurs the boundaries between what's bodily and what's digital.

Greater person enjoyment: AR gives a spellbinding and customized person experience through offering real-time statistics and interactive content material that decorates the physical world. Users can access applicable information, 3D models, and multimedia content material, improving their notion of fact and facilitating better decision-making.

Immersive leisure: AR is revolutionizing the gaming and amusement industries with the aid of uniting virtual elements with the real world. Gamers can enjoy interactive gameplay in their personal environment, leading to extra-attractive and noteworthy studies.

"Challenges like technological barriers and privacy issues have to be addressed to ensure accountable and vast usage. As AR continues to conform, its impact on society will surely shape a more informed, immersive, and related future."

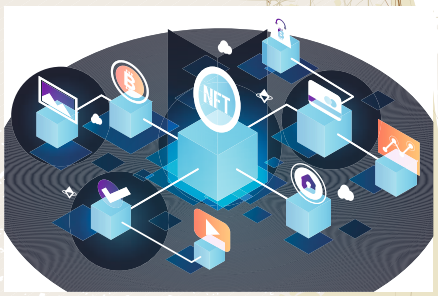
Privateness and protection: AR increases privacy troubles because it frequently calls for access to non-public facts and environments for efficient performance. This increases issues related to statistics on misuse and ability protection breaches.
Protection dangers: while AR is utilized in contexts that call for attention, along with riding or running equipment, it is able to end up being a distraction, leading to protection risks and injuries.

Transforming Industries: AR is disrupting diverse sectors, consisting of retail, healthcare, architecture, and tourism, by improving client studies, enhancing education, and optimizing processes.
Shaping virtual interaction: AR is reshaping how we interact with technology. It is transferring us far from conventional screens and enabling more spontaneous and natural user interfaces. Empowering get right of entry to facts: AR empowers get right of entry to knowledge and information by providing context-precise statistics, making it available to humans of various expertise.

Augmented reality is a recreation-changing era that bridges the space between the bodily and digital worlds, revolutionizing various industries and the manner in which we engage with it. Its advantages, which include stronger user experiences and advanced getting to know, provide huge potential for a fine alternative. However, challenges like technological barriers and privacy issues have to be addressed to ensure accountable and vast usage. As AR continues to conform, its impact on society will surely shape a more informed, immersive, and related future.

Blockchain

-By Ishu Sharma



Block chain is a type of digital ledger technology (DLT) that is revolutionizing the way we do business. A digital ledger is essentially a database that safeguards data on transactions like who delivered money to whom and when. Block chain is a game-changing technology that underpins cryptocurrencies such as Bitcoin, but its applications go far beyond digital money. Block chain, at its core, is a decentralized and immutable ledger system that secures the recording of transactions and data over a network of computers. Each block in the chain comprises a list of transactions that cannot be changed once they are added, ensuring a high level of security and transparency. Because of its dispersed structure, there is no need for intermediaries such as banks, lowering the danger of fraud or data manipulation. As a result, block chain has found uses in a variety of industries, ranging from finance and supply chain management to healthcare and voting systems, and it has the potential to alter how we connect and conduct business in the digital age.

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Block chain is a digital ledger system that is decentralized and unchangeable, and it securely records transactions across a network of computers. It works on the cryptographic verification principle, in which each block of data has a unique code that links it to the previous block, forming a chain. This design offers data transparency, traceability, and resistance against tampering. Block chain was originally designed to support cryptocurrencies such as Bitcoin, but its uses have now grown to include finance, supply chain, healthcare, and other areas. Its distributed structure and consensus processes facilitate trust and efficiency in data management, making it a viable future technology.

Embracing The AI Revolution : A journey into Novel Frontiers

-By Ayon Ghosh

> "Artificial Intelligence will have a more profound impact on humanity than fire, electricity and the internet"
>
> ~Sundar Pichai
> CEO, Google LLC

In the not-so-distant past, artificial intelligence (AI) was a distant dream confined to the realms of science fiction. Today, it is a rapidly evolving reality, revolutionizing industries, enhancing our lives, and reshaping the world as we know it. AI has become the driving force behind a technological revolution, propelling us into an exciting era where machines possess the potential to think, learn, and adapt like humans. In this article, we delve into the captivating world of AI, exploring its transformative impact, boundless possibilities, and the exhilarating journey that lies ahead.

The seeds of AI were planted in the 1950s when visionary minds like Alan Turing and John McCarthy theorized about machines that could imitate human intelligence. As the years passed, AI gradually evolved from mere theoretical concepts to tangible advancements.

Today, AI is a ubiquitous presence in our daily lives, enhancing our experiences and streamlining various tasks. From virtual assistants like Siri and Alexa that understand our voice commands to personalized content recommendations on streaming platforms, AI is becoming an indispensable part of our digital ecosystem. Moreover, in the realm of industry and business, AI-driven technologies(Like Open AI's Chat GPT) are revolutionizing productivity, predictive analytics, and even customer service.

The tantalizing prospect of AI achieving "singularity" has captured the imagination of many. Singularity refers to the point at which AI surpasses human intelligence and gains self-awareness. While the concept raises both excitement and concern, it represents the ultimate frontier of AI's potential. One of the most remarkable areas of AI's influence is in the field of healthcare. From diagnosing diseases more accurately to assisting surgeons during complex surgeries, AI is revolutionizing medical practices. The promise of early detection and personalized treatment plans offers a glimpse into a future where AI plays a pivotal role in extending human lifespan and improving overall health outcomes.

The cosmos beckons us with its enigmatic wonders, and AI is proving to be a steadfast companion on our journey into space. From autonomous rovers exploring distant planets to analyzing vast amounts of data from telescopes, AI is empowering humanity's quest to unravel the mysteries of the universe.

AI's foray into the world of creativity is awe-inspiring. Machines are now composing music, generating art, and even writing literature. While some may perceive this as a challenge to human creativity, others embrace it as an opportunity to collaborate and amplify the artistic potential of both humans and machines. With the rapid pace of AI advancements, ethical considerations are vital in ensuring responsible use of this transformative technology. Questions about data privacy, bias in AI algorithms, and the impact of automation on jobs require thoughtful contemplation. Striking the balance between progress and responsibility is an exhilarating challenge that demands collective effort from governments, industries, and society as a whole.

As we embark on this thrilling adventure with AI, we must embrace the boundless possibilities and meet the challenges head-on. The future of artificial intelligence holds the potential to redefine human existence, pushing the boundaries of knowledge, creativity, and understanding. Our partnership with AI promises to unlock the secrets of the universe, heal the sick, and augment our innate capabilities. As we march forward into this exhilarating frontier, let us remain steadfast in our commitment to harness the power of AI for the betterment of humanity, embracing the transformative journey ahead with curiosity, courage, and compassion.

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Artifical Intelligence for cyber security : A doubled edged sword

-By Anupam and Ebenezer

Harnessing the Power and Addressing the Risks of AI in the Battle against Cyber Threats. In the ever-evolving landscape of cyber threats, the combination of artificial intelligence (AI) and cybersecurity has emerged as an awesome defense mechanism. AI offers unique abilities to detect, prevent, and respond to cyber-attacks with speed and precision. However, while it holds great promise, it also presents unique challenges and risks that demand careful inspection. This article explores the world of AI-powered cybersecurity, exploring its benefits, pitfalls, and the path to maximizing its potential while reducing its dangers.

AI has revolutionized numerous sectors, and cybersecurity is no exception. Conventional protection solutions regularly struggled to hold pace with the rapidly mutating approaches of cybercriminals. AI, with its ability to research vast quantities of data in actual-time, pattern reputation, and continuous learning has grown to be a game-changer.

AI algorithms are best at identifying patterns indicative of malicious activities, permitting safety systems to discover the threats with high-quality accuracy and efficiency; Automated Response: In combination with machine learning, AI can automate the response to certain threats, enabling real-time countermeasures and reducing the response time to incidents; User Behavior Analytics: AI-powered systems can examine consumer behavior to discover abnormalities, flagging suspicious activities that could suggest unauthorized get entry to or insider threats.

Reducing False Positives: By fine-tuning threat detection, AI minimizes false positives, helping cybersecurity teams focus on genuine threats, thus optimizing resource allocation; Adaptive Defense: AI can adapt its defense mechanisms based on the evolving threat landscape,providing continuous protection against emerging cyber risks.

"AI-powered systems can examine consumer behavior to discover abnormalities, flagging suspicious activities that could suggest unauthorized get entry to or insider threats"

Despite its many advantages, AI also poses significant challenges and potential risks: Adversarial Attacks: Cybercriminals can leverage AI techniques to craft more sophisticated attacks,evading detection and fooling AI-powered security systems; Bias and Ethical Concerns: AI algorithms are simplest as impartial as the statistics they may be skilled on, and biased information can result in discriminatory results or skewed risk tests; Complexity and Interpretability: As AI systems become extra complicated, understanding their decision-making strategies may be hard, making it hard to provide an explanation for or validate their actions. Data Privacy Concerns: Utilizing AI for cybersecurity often involves processing large volumes of sensitive data, raising concerns about data privacy and potential misuse; Overreliance on AI: Relying totally on AI for cybersecurity should lead to complacency, with human understanding and judgment being omitted.

Embracing AI with CautionTo fully harness the potential of AI in cybersecurity while managing its risks, a cautious and balanced approach is crucial. Holistic Strategy: Organizations need to expand a complete cybersecurity approach that integrates AI with traditional security features and human expertise; Transparency and Accountability: AI algorithms and their decision-making methods ought to be obvious and concern to scrutiny, ensuring accountability for their consequences.

AI's role in cybersecurity is a double-edged sword, offering unparalleled advantages and unique
challenges. Embracing AI with a cautious and informed mindset is essential to leverage its power while mitigating its risks effectively. By way of putting the proper balance between human ingenuity and AI-driven innovation, we can reinforce our defenses towards cyber threats and make certain a safer virtual landscape for individuals, organizations, and mankind.

"AI systems become extra complicated, understanding their decision-making strategies may be hard, making it hard to provide an explanation for or validate their actions."

The future of E-Sports in India : A Bright Horizon Beckons

-By Ravikant Yadav and Karthikey

The integration of artificial intelligence (AI) into education has given rise to a powerful synergy that is transforming the way we teach and learn. This collaborative partnership between human educators and intelligent machines is redefining education, impacting classrooms, and shaping the future of knowledge dissemination.

The special impact of the synergy between teaching and artificial intelligence is evident in the realm of personalized learning. AI algorithms analyze vast amounts of student data, tailoring educational content and pacing to match individual learning styles and needs. This personalized approach revolutionizes traditional classrooms, enabling educators to address the unique requirements of each student and fostering a deeper understanding of subjects.

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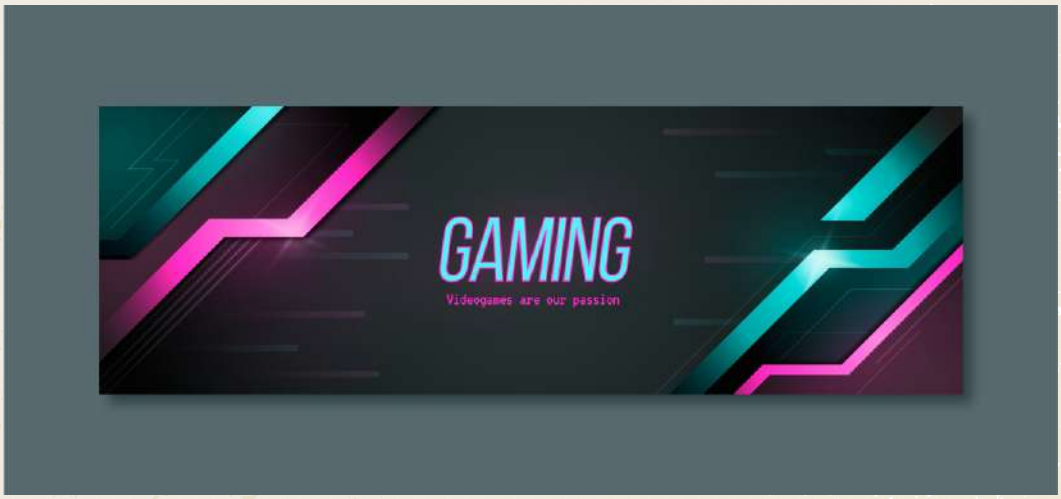
24x7 Availability: The 24x& availability of AI ensures continuous support and assistance, transcending time zones and geographical barriers. Data-Driven Insights: Educators gain valuable insights into student performance, enabling informed decisions and timely interventions to maximize learning outcomes. Efficient Administration: AI automates administrative tasks, freeing up educators' time to focus on teaching and mentorship. Adaptive Assessment: AI-driven assessments adapt to students' skill levels, providing accurate evaluations and immediate feedback.

Accessible Resources: AI curates high-quality, diverse learning materials, ensuring comprehensive access to educational resource; Addressing Learning Differences: AI accommodates varying learning styles, providing alternative explanations and formats to suit individual preferences. While the synergy between teaching and AI offers numerous advantages, there are concerns about overreliance on technology. Excessive dependence on AI could potentially lead to a lack of human connection in the learning process, diminishing the role of emotional support, mentorship, and inspiration that educators provide. Striking a balance between technology and human interaction is crucial to ensuring a well-rounded educational experience.

In conclusion, the symbiotic relationship between teaching and artificial intelligence is reshaping education as we know it. The advantages of personalized learning, data-driven insights, efficient administration, and adaptive assessments highlight the transformative potential of this collaboration. However, it is essential to remain mindful of the potential drawbacks and strive to maintain the human touch that is integral to effective education. As we navigate this exciting synergy, the future holds the promise of more engaging, individualized, and impactful learning experiences.



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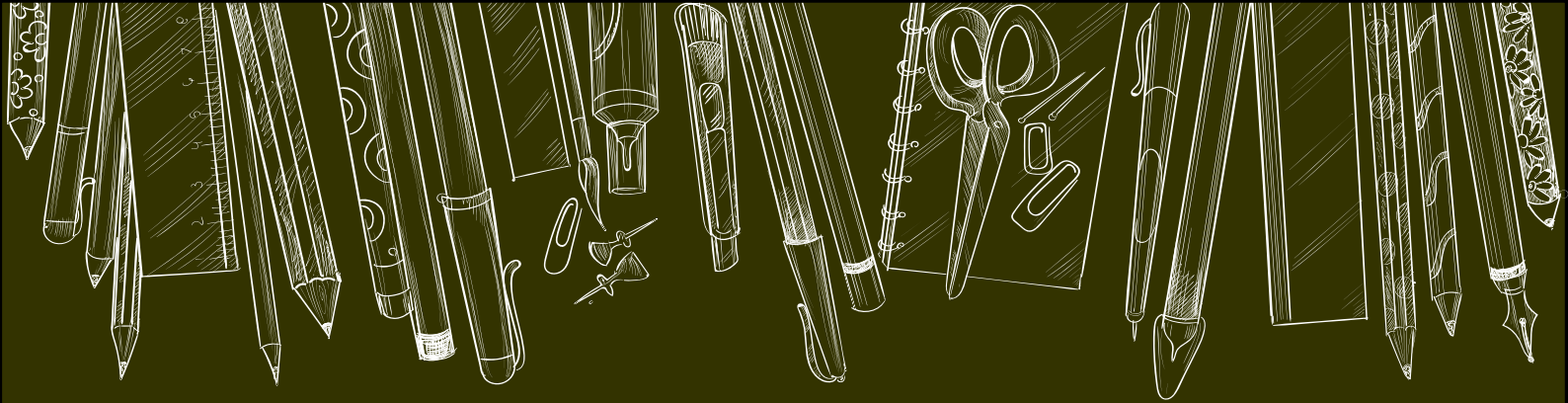

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SOURABH JOSHI

VISHVAJEET MAHEECHA

AISHWARYA BIJU

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SUHANI GUPTA

GAURVI CHATURVEDI

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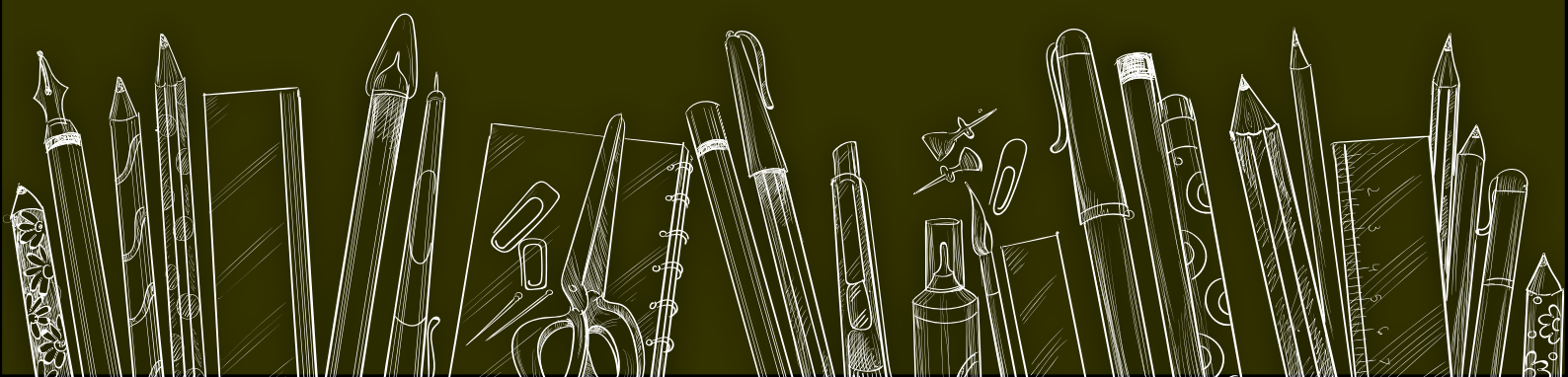
JOEL C THOMAS

SHREYA SHARMA



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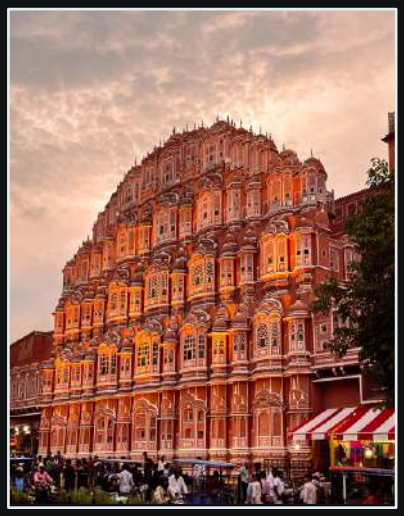

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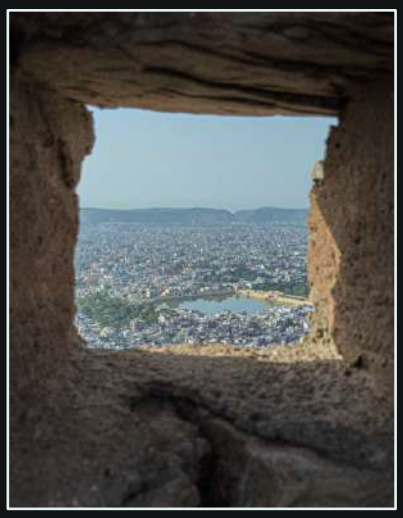


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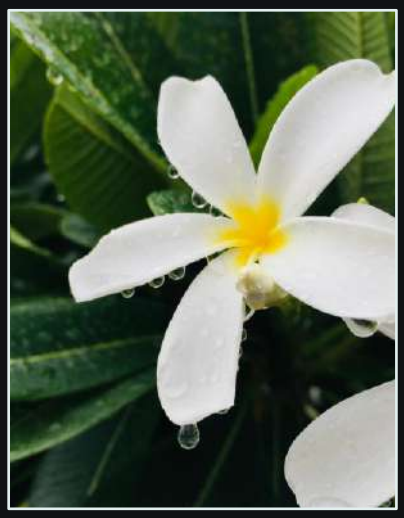

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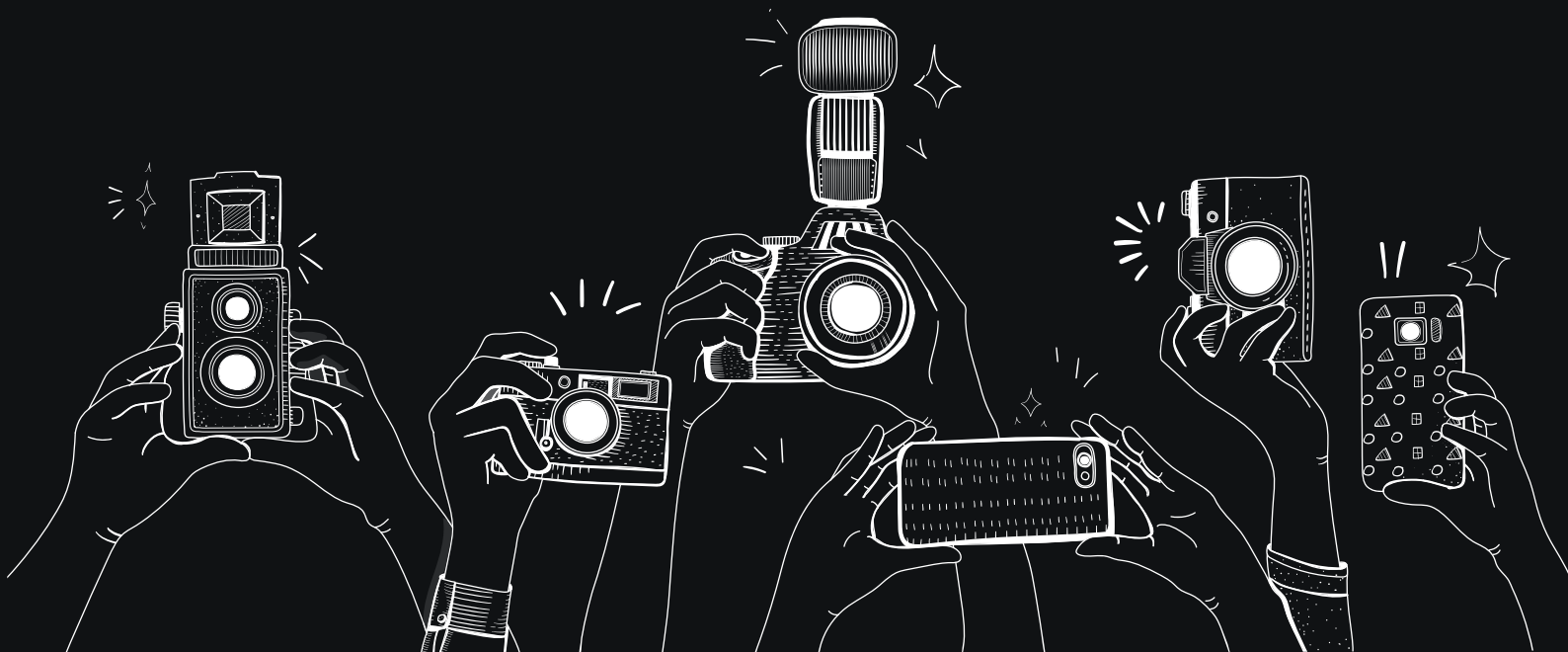

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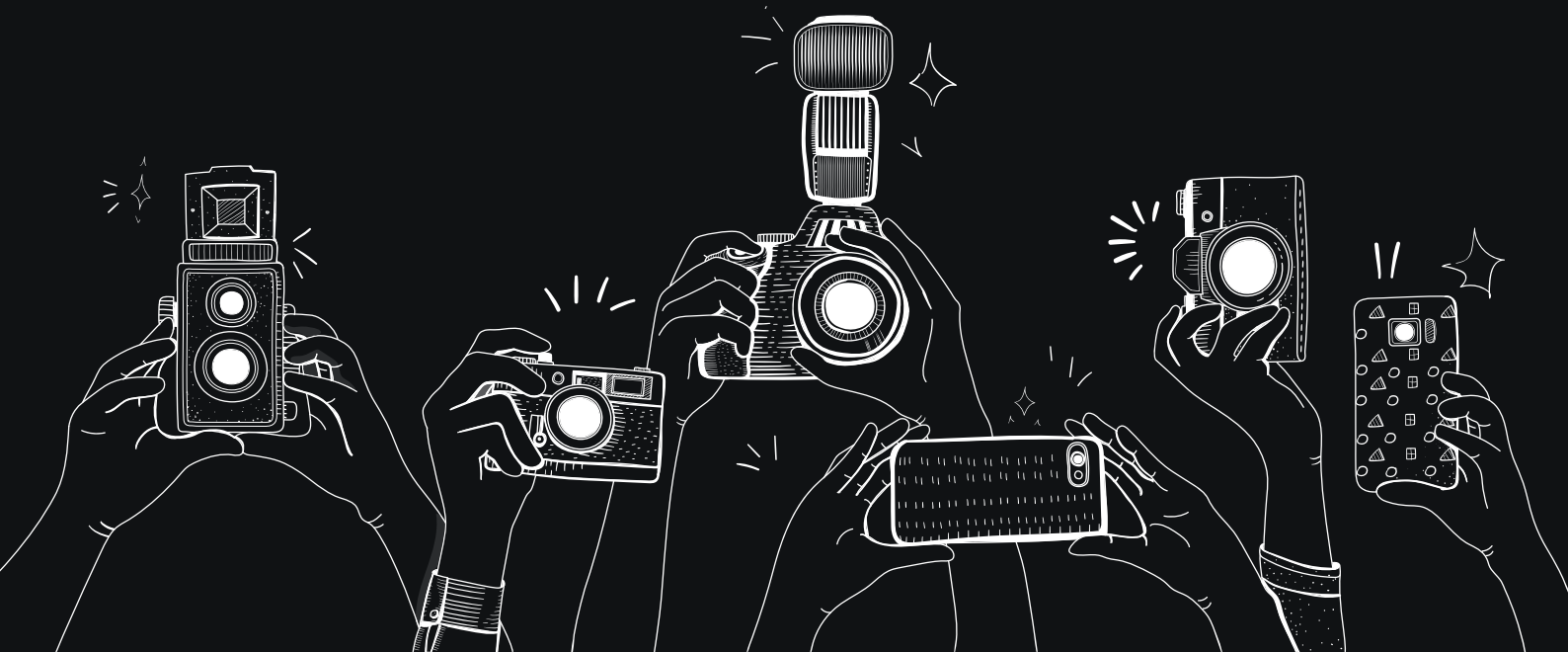

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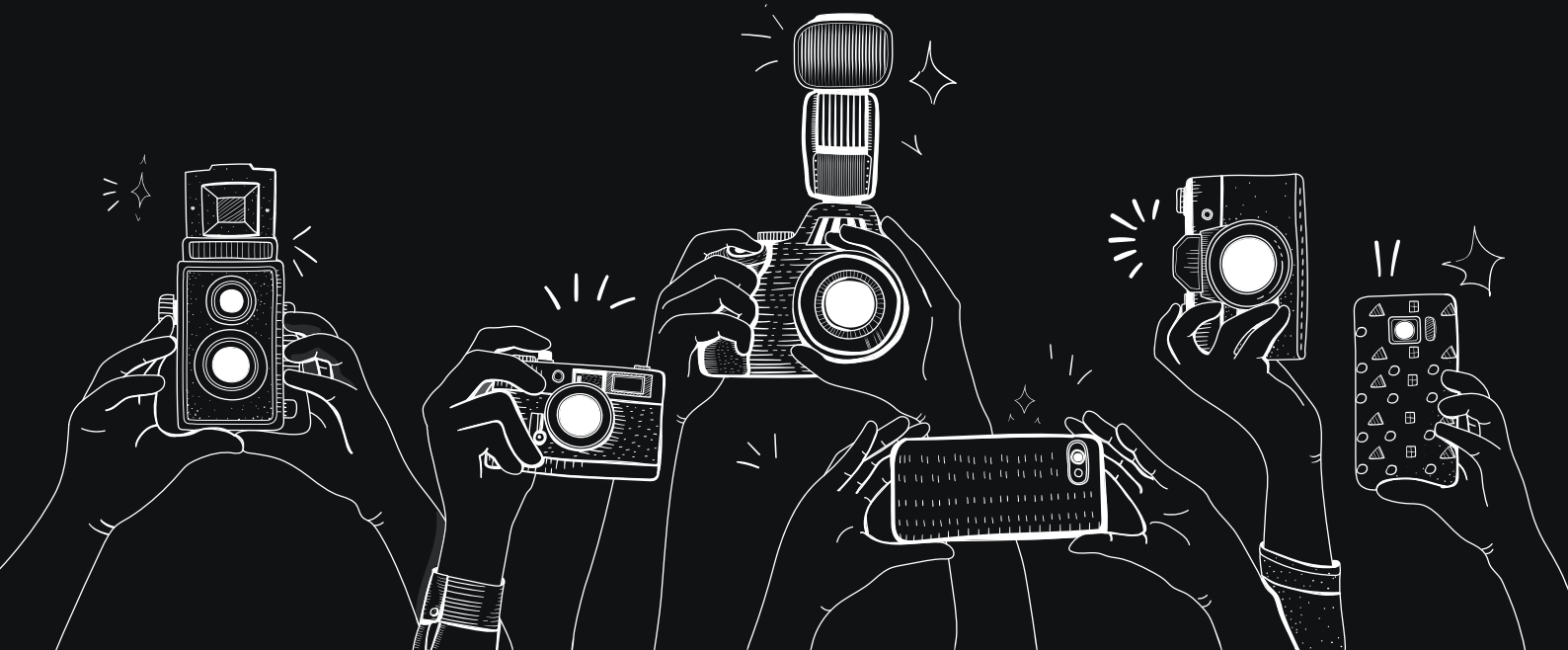
DIKSHA BHAMBHANI



INNOVATE ELEVATE

TECH

DEPARTMENT OF COMPUTER SCIENCE

"Any sufficiently advanced technology is indistinguishable from magic."
— Arthur C. Clarke

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Department of Computer Science