# COMPYOUTH ASSOCIATION

## E-MAGAZINE

### FOR THE ACADEMIC YEAR 2024-25

## DEPARTMENT OF COMPUTER APPLICATIONS (MCA)

## DR.MAHALINGAM COLLEGE OF ENGINEERING AND TECHNOLOGY,POLLACHI

🌍*https://drmcet .ac.in/computer-applicat ions/*
📍*MCET – NPT Campus, Udumalai Road,. Pollachi – 642 003*

# TABLE OF CONTENTS

# DEPARTMENT VISION, MISSION, PO,PEO AND PSO

## VISSION

The Department of Computer Applications seeks to transform students from diverse backgrounds into proficient and competitive software experts who can deliberately solve the needs of the community while coming up with innovative solutions to shifting contemporary issues.

## MISSION

To become proficient with computer applications, employ state-of-the-art teaching and learning techniques. Teach students to be successful, moral, and effective problem solvers who will also become lifelong learners and contribute to the strengthening of our nation. Provide a foundation for value-based learning and integrate new research findings and discoveries into a range of scientific fields. To promote morality and excellence among students. Encourage students to develop their entrepreneurial abilities so they can lead nations globally

## PEO'S

After 2 years of completion of the programme the graduates will be able to: PEO1: Domain Expertise: Employ computational and mathematical knowledge to identify, characterize, create, implement, and improve software solutions for a range of problems across various application areas. PEO2: Computing Skills and Ethics: Employ technical skills to solve societal and environmental issues in an ethical manner. PEO3: Lifelong Learning and Research: Committed to continuous learning and research in computing.

## PO'S

On successful completion of the programme the graduates will be able to: PO1. An ability to independently carry out research/investigation and development work to solve practical problems PO2. An ability to write and present a substantial technical report/document PO3. Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program PO4. Skilled to identify an appropriate design, framework, and data models to create a system that performs well. PO5. Proficient in creating real-time applications leveraging emerging and contemporary technologies.

## PSO'S

On successful completion of the programme the graduates will be able to: PSO1. Application Development: Apply software engineering principles in the design and development of web and mobile applications. PSO2. Data management: Manage and analyze huge volume of data in real world problems.

# TECHNICAL SPOTLIGHT

# Digital Ghosts: The Stories We Leave Behind Online


When someone we love passes away, we turn to memories for comfort. But in today's world, many of those memories aren't tucked away in photo albums or letters — they're scattered across Instagram posts, voice notes, playlists, and unread texts. They live on in our phones, in the cloud, and in the quiet hum of servers half a world away

Technology has given us new ways to remember, but also new challenges in letting go. Grief is deeply human, full of emotion and contradiction. And while AI might offer comfort, it also risks trapping us in an endless loop of reminders and recreations

HARSHINI S
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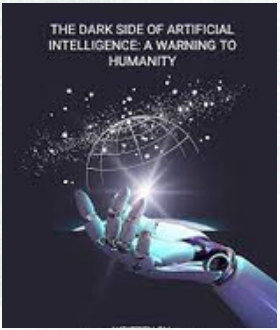
# The Dark Side of AI:
# Can Machines Learn Our Biases?




**Artificial Intelligent credit scoring tools are often plagued with the same biases as the humans using them. If AI tools trained on biased lending histories only reinforce discriminatory lending practices, people from marginalized communities can be unjustly denied loans or receive harsh borrowing terms.**

**As author and data scientist Dr. Ruha Benjamin points out "The problem is not just what the machine is doing, but the assumptions that were already built into the systems we make and the society that these systems are reflecting". Cathy O'Neil, author of Weapons of Math Destruction explains, "When AI is configured in such a way that it uses data associated with race and/or demographic data, it is unlikely that any algorithm would be without racial bias especially when there is little to no retention of race or demographic data."**

ROSHINI H
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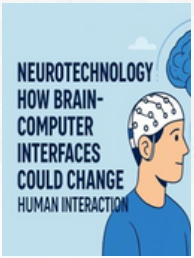
# Neurotechnology: How Brain-Computer Interfaces Could Change Human Interaction

The susceptibility of hackers or unauthorized individuals accessing one's brain data opens new vistas in digital protection and individual privacy. Additionally, its manufacturing and application must keep in mind social equity, i.e., that these technologies don't widen the disparities.




Despitethis hindrance, ongoingadvancement in signalprocessing, machine learning, and wearable neurotechnology suggest a future soon where brain-computer BCIs can usher in an era in which human communication becomes independent of language and distance, rendering the workings of the mind, hidden till now, public knowledge.

**NAFILA BANU N**
**727624MCA007**

Neurotechnology in the application of brain-computer interfaces (BCIs) can revolutionize human interaction with other people and the world around them. BCIs are devices that facilitate the direct interaction of the brain with outside devices via the perception and processing of neural signals.

# From Cash to Clicks:

# How Technology Changed the Way We Pay

**The digital payment revolution began modestly with credit and debit cards. However, the widespread use of mobile phones and high-speed internet has made financial transactions more flexible than before. Mobile apps and e-wallets such as Google Pay, Apple Pay, Paytm, and PhonePe allow users to make payments with a few taps. Renting a house, ordering food, and paying bills can all be done almost entirely without using real money.These days, everyone uses digital payments, from local vegetable vendors to large corporations.**

**Even for people with basic smartphones, platforms like UPI (Unified Payments Interface) have made money transfers incredibly easy in many countries, especially India. This has expanded financial inclusion and enhanced small business customer service. Carrying a wallet full of cash was normal a few years ago. The same task can now be completed more quicklyand securely with a smartphone. The rapid advancement of digital technology has altered our financial management practices. Instead of being just a convenience, the shift from cash to virtual payments is a revolution. Another interesting change is how people think about money.**

SHALINI PRIYA
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# TRENDS IN SOFTWARE DEVELOPMENT

# Progressive Web Apps (PWAs): The Future of Web Development

Progressive Web Apps, commonly known as PWAs, are an innovative approach to web application development that combines the best features of web and mobile applications. They are designed to function seamlessly on any device with a standards-compliant browser, whether it's a smartphone, tablet, or desktop computer.


One of the most remarkable aspects of PWAs is their reliability. They are designed to load instantly, even in conditions of poor or unstable internet connectivity. This is made possible through the use of service workers—scripts that run in the background and manage caching efficiently. As a result, users can access the application offline or during intermittent network availability, which significantly enhances usability and convenience. Furthermore, PWAs are known for their speed.

NISHOK V S
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# HOW TO SET TRENDS IN SOFTWARE DEVELOPMENT?

## Devops And Automation

DevOps automation represents a modern, collaborative strategy in software development that leverages tools and defined processes to streamline and automate tasks throughout the entire software development lifecycle. It effectively dismantles the traditional barriers between development, operations, and even security teams, cultivating a culture of shared responsibility and ongoing enhancement. Essentially, DevOps automation aims to eliminate manual, repetitive work, boosting efficiency, reliability.

The ecosystem of tools supporting DevOps automation is vast and varied, addressing different stages of the SDLC. Popular version control systems include Git (with platforms like GitHub, GitLab, Bitbucket).

DHANUS HARSHAN K
727624MCA053

Key steps also include embracing Infrastructure as Code, implementing continuous monitoring, and fostering a culture of continuous learning and iteration. By systematically automating processes and nurturing collaboration, organizations can significantly enhance their software delivery capabilities, respond swiftly to market demands, and drive continuous innovation.

# LOW-CODE AND NO-CODE PLATFORMS

Low-code and no-code platforms are revolutionizing software development by empowering a broader range of users to create applications with unprecedented speed and efficiency, effectively addressing the escalating demand for digital solutions in a landscape often constrained by a shortage of skilled developers. These environments streamline the app-building process through intuitive visual interfaces, such as drag-and-drop components and pre-built templates, with low-code requiring some coding knowledge for deeper customization and no-code enabling even those without programming expertise to build fully functional applications.

Popular tools like OutSystems, Zoho Creator, Microsoft Power Apps, Bubble, and Appgyver exemplify their versatility in use cases ranging from automating workflows and building internal tools to creating customer-facing web and mobile apps and prototyping ideas.

KARTHIKA S
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# AI IN EDUCATION

# AI IN EDUCATION

AI is changing the way we learn, making education smarter and more personal. With AI tools, students can get help that's just right for them—whether it's practicing a tricky topic or getting instant feedback. Teachers also benefit from AI, as it can take care of boring tasks like grading and tracking progress. Cool features like speech-to-text and translations make learning easier for everyone, including those with special needs.

Artificial Intelligence is rapidly redefining the educational ecosystem by integrating adaptive learning algorithms, intelligent tutoring systems, and data-driven insights. AI models can analyze student behavior and performance to deliver customized learning paths, increasing retention and efficiency. Natural Language Processing enables AI to grade assignments, respond to queries, and even generate educational content autonomously. Despite these advancements, concerns regarding data security, algorithmic fairness, and digital infrastructure must be addressed to ensure responsible deployment.

SUJITHA S 727624MCA018

# TECH AROUND THE WORLD

# GLOBAL IMPACT OF TECHNOLOGY ON CULTURE AND SOCIETY

Advancements in technology have significantly bridged geographical gaps, allowing individuals worldwide to maintain real-time communication. Platforms such as messaging apps and social networks enable seamless interactions among families, friends, and professionals, fostering stronger global relationships. This enhanced connectivity not only nurtures personal bonds but also facilitates collaborative efforts and cultural exchanges, making our vast world feel more interconnected than ever before.

The digital era has transformed traditional cultural expressions, blending age-old customs with contemporary trends. Online platforms serve as canvases where art, music, and dance evolve, reflecting a fusion of heritage and modernity. While this digital amalgamation offers exciting creative avenues, it also underscores the necessity of preserving unique cultural identities to ensure the richness of global diversity remains intact.

PRAGATHEESWARI
727624MCA027

# How different countries are adapting technology?

**China:**

**China is rapidly transitioning into an "electrostate," with electrification reaching 30%, surpassing the EU and US. This shift is evident in sectors like electric vehicles (EVs) and high-speed rail, with the latter expanding to 45,000 km and plans to reach 60,000 km by 2030. The "Made in China 2025" initiative has propelled China to global leadership in areas such as high-speed rail, graphene, unmanned aerial vehicles, solar panels, and EVs.**

VIMAL S
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**India:**

**India is emerging as a significant player in AI, with the market projected to reach $8 billion by 2025. Government initiatives like the National Strategy for Artificial Intelligence and Digital India are fostering growth. Notably, 23% of Indian businesses have implemented AI, and 73% plan to adopt it in 2025. Additionally, India aims to lead in shaping global 6G technology regulations, reflecting its commitment to technological advancement.**

# DIGITAL INNOVATION COMING FROM DEVELOPING NATIONS

# DIGITAL INNOVATION COMING FROM DEVELOPING NATIONS

When we hear about new technology, we often think of big companies in places like the U.S. or Europe. But some of the most useful and life-changing tech ideas are now coming from developing countries—where people are using digital tools in smart ways to solve everyday problems.

In India, the government created Aadhaar, a digital ID system that gives people a unique number linked to their fingerprint. With it, they can access services like healthcare and banking, even if they live far from cities.

VISHNUPRIYA S
727624MCA014

Take Kenya, for example. Many people there don't have access to banks, so they use M-Pesa, a mobile money service that lets them send and receive cash through their phones. It's quick, easy, and safe—especially for those in rural areas.

# BLOGS

# ALGORITHMS IN DAILY LIFE: ARTIFICIAL INTELLIGENCE

The current digital era, artificial intelligence (AI) has subtly permeated our daily lives and is no longer merely a sci-fi futuristic idea. Algorithms driven by AI are continuously at work in the background, from the moment we wake up and check our phones to the way we navigate traffic or shop online. We are all surrounded by algorithms, whether we are aware of it or not, despite the widespread belief that artificial intelligence belongs in labs or high-tech sectors.

M. VIDHYA
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Our personal gadgets are among the most frequent ways artificial intelligence appears in our daily lives. AI algorithms are used by smartphones, smartwatches, and voice assistants like Google Assistant and Alexa to identify speech, anticipate user behavior, and make tailored recommendations. For instance, your music app may make a playlist based on your preferences, or your phone may suggest a route to work based on traffic patterns. These functions are based on machine learning models that gradually learn from your choices and behavior.

# How Cybersecurity Affects Everyone, Not Just Experts

**What is Cybersecurity, Really?**

**Cybersecurity refers to protecting systems, networks, and data from digital attacks. It's not just about firewalls and encryption—it's about keeping your personal and sensitive data safe.**

**Why It Matters to You:**

**Here are some examples of how cybersecurity touches your life:**

- **Using Public Wi-Fi: When you connect to free Wi-Fi in cafes or airports, your data is exposed. Hackers can intercept it if the connection isn't secure.**

- **Online Shopping: When you enter your card details, you trust that the site is secure. But without HTTPS or proper data protection, your information can be stolen.**
- **Social Media: Clicking on random links or sharing too much personal info can lead to identity theft or phishing scams.**

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# Clean Tech, ClearFuture: Embracing GreenComputing Today

In the modern era of digitalization, technology has become a part of our lives. From smartphones and laptops to gigantic data centers powering the internet, computers are omnipresent. Green Computing refers to designing, utilizing, and recycling technology in a way that minimizes pollution. The aim is to lower the consumption of energy, reduce electronic waste, and promote recycling and reuse of hardware to build a greener future.

The information technology industry is accountable for the majority of global energy consumption. Data centersjust use enormousamounts of electricity, usually derived from fossil fuels that emit greenhouse gases into the environment. If things go on inthis direction, it will promote global warming and harm ecosystems globally.

VARNASRI R
727624MCA006

Green Computing emphasizes a number of strategies that minimize the environmental impact of technology. Virtualization is anothercritical method, as it enablesmultiple virtual serverson one physical machine, maximizing utilization while minimizing energy waste. Cloud computing also dynamically allots computing resources only as necessary, which eliminates extra power usage.

# Heart Meets Hardware:
# The Soft Side of Smart Technology

**What Exactly Is Emotion AI?**

**Emotion AI, or Affective Computing, lets technology sense and respond to human emotions. By reading facial expressions, voice tone, text, and even heart rate, it makes interactions feel more natural, personal, and human-like.**

**The Tech Magic Behind Emotion AI:**

**Emotion AI works by interpreting various human signals to understand how we feel. For example, facial recognition technology uses cameras to track subtle muscle movements, identifying emotions like happiness, sadness, anger, or surprise. Voice analysis picks up on tone and pitch through microphones, detecting stress, frustration, or excitement.**

NITHYA SREE A S
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**Humanizing Tech:**

**Emotion AI is making technology more human — powering smarter apps that sense how we feel. From mental health to marketing, it personalizes experiences like never before. But as emotion meets innovation, we must protect privacy and ensure empathy is used ethically.**

# Why Everyone Should Learn Coding in 2025

By 2025, coding has developed into a strong and necessary ability for individuals of all ages and professions. Coding is now a digital superpower that enables anyone to build websites, apps, and automate daily tasks; it is no longer just for software engineers or IT specialists. The gap between people who understand technology and those who don't is widening as it continues to advance at a breakneck speed. Gaining the confidence to interact with technology more deeply by learning to code turns you from a passive user into an active creator.

Writing code is only one aspect of coding, though; it also fosters critical thinking, problem-solving, and the ability to translate concepts into workable solutions. Coding opens up a world of possibilities, whether you're a professional trying to advance your career, a student planning your future, or an entrepreneur creating your ideal product. Knowing the basics of software gives you a competitive edge in almost every industry, especially with the rise of artificial intelligence, robotics, blockchain, and the Internet of Things (IoT).

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# Quantum Computing Education India:

In India, the study of quantum computing is becoming a key component of the country's technological innovation and self-reliance. Understanding how quantum technologies can revolutionize industries like artificial intelligence, materials science, cryptography, and pharmaceuticals, India has started to make large investments in developing a highly qualified workforce and cutting-edge research facilities.


There are now specialized courses, workshops, and research opportunities available in quantum mechanics, quantum computing, and quantum information science at prestigious institutions like the Indian Institute of Science (IISc), Indian Institutes of Technology (IITs), and Indian Institutes of Science Education and Research (IISERs). The National Mission on Quantum Technologies and Applications (NM-QTA) was established by the Indian government in 2020 with a five-year budget of ₹8,000 crore to support quantum research and education

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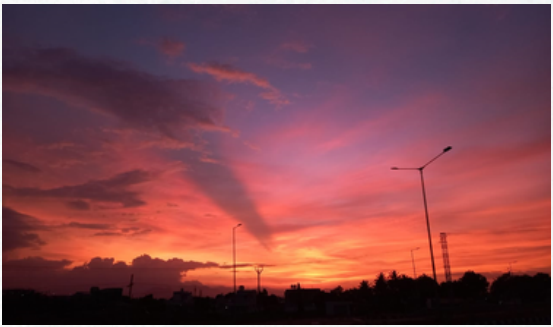
# MOMENT IN TIME



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