Gharda Foundation's,

Gharda Institute of Technology & Management, Lavel

ALGORIX

MCA STUDENT ASSOCIATION

CODE • ANALYSE • INNOVATE • ELEVATE

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Code | Analyse | Innovate | Elevate

E-NEWSLETTER
2026 – 27
VOLUME 1 | ISSUE 1

Welcome to AlgoriX E-NEWSLETTER

A digital platform to keep you connected with the latest events, achievements, insights and opportunities from the MCA family.

Together Towards A Brighter Future



From the Editor

At **AlgoriX**, we believe in the power of collaboration, continuous learning and innovation. This e-newsletter showcases the vibrant activities, accomplishments and opportunities that make our MCA journey special.

Let's explore what's inside!

TECHNOLOGY BUILDS SOLUTIONS, PEOPLE BUILD THE FUTURE.

INSIDE THIS ISSUE

01 Guest Lectures
02 Student Achievements
03 Technical Articles
04 Other (Non-technical)

Learn New Skills | Build Connections | Create Opportunities | Make an Impact

More than Just a Department...

Guest Lecture on
"From Code to Career: Building Future-Ready Skills in Computer Applications"

Date: 12 September 2026

Resource Person: Ms. Shweta Desai

Designation: HR Management, Panther Nails, Pune

1 Introduction

Department of Master of Computer Applications, in association with AlgoriX MCA Student Association, organized the guest lecture on 12 September 2026, delivered by **Ms. Shweta Desai, HR Management**. The session focused on technical, professional and employability skills for a successful career in computer applications and IT, and understanding industry expectations and preparing for future opportunities.

2 Objectives

- To create awareness about the skills required to build a successful career in the IT industry.
- To understand the expectations of employers from computer application graduates.
- To identify the importance of technical and soft skills.
- To develop communication, teamwork, problem-solving and interpersonal skills.
- To understand the importance of resume preparation and interview readiness.
- To encourage students to develop future-ready skills.
- To provide career guidance and continuous learning.

3 Proceedings of the Programme

The session commenced with a formal welcome and introduction of Ms. Shweta Desai. She discussed the transition from academic life to professional careers, and highlighted the combination of technical knowledge, communication, professional attitude and problem-solving abilities. The resource person also covered recruitment expectations, selection process, resume improvement, interview preparation and professional presentation. She emphasized continuous learning, adapting to changing technologies and industry requirements, and identifying strengths for a career-oriented approach.

5 Outcome of the Programme

The guest lecture provided valuable exposure to career development, employability skills and industry expectations. Students gained awareness of:

- IT career skills and opportunities.
- Technical and professional skills.
- Communication, teamwork and problem-solving.
- Resume and interview readiness.
- Professional attitude and workplace expectations.
- Continuous learning and skill enhancement.
- Career planning in computer applications and IT.



4 Key Topics Covered

1. **From Academic Learning to Career** – Understanding how students can effectively transition to professional life.
2. **Industry Expectations** – Knowing the technical, professional and interpersonal skills expected by employers.
3. **Technical and Soft Skills** – Technical knowledge along with communication, teamwork, leadership and problem-solving.
4. **Resume Building** – Creating an effective resume highlighting skills, projects and achievements.
5. **Interview Preparation** – Building confidence and learning professional workplace behavior.
6. **Employability Skills** – Improving readiness for employment and long-term career growth.
7. **Continuous Learning and Career Development** – Upgrading knowledge and adapting to industry trends.

6 Conclusion

The guest lecture on "From Code to Career: Building Future-Ready Skills in Computer Applications" was organized on 12 September 2026 by the Department of Master of Computer Applications in association with the AlgoriX MCA Student Association. The session was delivered by **Ms. Shweta Desai, HR Management.**

The programme offered valuable insights into career planning, employability, industry expectations and professional development, motivating students to strengthen their technical and soft skills, prepare for recruitment and become future-ready IT professionals.

Department of Master of Computer Applications
In Association with AlgoriX MCA Student Association

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Guest Lecture on "Mini Project Management"



Date
29 September 2026

Students Present
23

Resource Person
Dr. Pratik Oak
Assistant Professor, GITM, Lavel

1 Introduction

The Department of Master of Computer Applications, in association with the AlgoriX MCA Student Association, organized a guest lecture on **"Mini Project Management"** on 29 September 2026. The session was delivered by Dr. Pratik Oak, Assistant Professor, GITM, Lavel.

2 Objectives

- To introduce students to the fundamentals of mini-project management.
- To develop an understanding of project planning and execution.
- To familiarize students with defining project objectives and scope.
- To encourage systematic problem-solving and teamwork.
- To highlight the importance of time management and timely completion.
- To improve students' preparedness for academic projects.

3. Proceedings of the Programme

The session commenced with a formal welcome and introduction of the resource person and the topic. Dr. Pratik Oak discussed the importance of project management in academic and professional fields.

The lecture focused on adopting a systematic approach to mini-projects, beginning with planning and problem identification and continuing through execution and completion. Students were also guided on the importance of project organization, teamwork, communication, and timely completion of project activities.

A total of 23 students attended the session and participated in the learning activity.

5. Outcome of the Programme

The guest lecture enhanced students' awareness of structured mini-project management. Students gained guidance on:

- Planning and organizing academic projects.
- Defining clear objectives and project scope.
- Managing time and project activities effectively.
- Applying teamwork and systematic execution in project development.



4. Key Topics Covered

1. **Project Planning** – Importance of planning before project development.
2. **Problem Identification** – Identifying a suitable problem and project purpose.
3. **Scope and Objectives** – Defining clear goals and project boundaries.
4. **Time Management** – Scheduling and completing activities within the available time.
5. **Project Execution** – Following a systematic development approach.
6. **Teamwork and Coordination** – Importance of communication and collaboration.
7. **Project Completion** – Organizing project work and fulfilling academic requirements.

6. Conclusion

The guest lecture on "Mini Project Management" was successfully conducted on 29 September 2026 by the Department of Master of Computer Applications in association with the AlgoriX MCA Student Association. The session delivered by Dr. Pratik Oak, Assistant Professor, GITM, Lavel, provided students with useful academic guidance on systematic project planning, execution, teamwork, and timely completion.

The programme served as an effective academic enrichment activity supporting students' practical learning and project development skills.

Department of Master of Computer Applications
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Guest Lecture on

"Internship & Software Development – Bridging Academic Learning with Industry Practices",



Date	Total Present Students	Venue	Resource Person
06 October 2026	34	MCA Class	Mrs. Manaswi Gowalkar Founder and CEO, NextVision IT Solution

1. Introduction

The Department of Master of Computer Applications, in association with the AlgoriX MCA Student Association, organized a guest lecture on **"Internship/Software Development"** on 06 October 2026.
The session was delivered by **Mrs. Manaswi Gowalkar,** Founder and CEO of **NextVision IT Solution**.

The lecture focused on the importance of internships, practical software development skills, industry expectations, and the transition from academic learning to professional software development. The session aimed to provide students with valuable industry-oriented knowledge and guidance for building successful careers in the IT sector.

2. Objectives of the Guest Lecture

- To create awareness about the importance of internships in building professional skills.
- To understand the software development life cycle and industry practices.
- To bridge the gap between academic knowledge and real-world software development.
- To familiarize students with current industry requirements and expectations.
- To provide insights into developing websites, web applications, mobile applications and customized software solutions.
- To understand the importance of practical skills, problem-solving and continuous learning.
- To guide students regarding career opportunities and professional growth in the software industry.

3. Proceedings of the Programme

The session commenced with a formal welcome and introduction of the resource person, **Mrs. Manaswi Gowalkar,** Founder and CEO of **NextVision** IT Solution.

Mrs. Gowalkar shared her professional experience in the software and IT industry and provided students with valuable insights into the practical aspects of software development. She explained the importance of internships as an effective platform for gaining hands-on experience, understanding workplace practices and developing industry-ready skills.

The resource person discussed various aspects of software development and highlighted the importance of understanding client requirements, planning, development, testing, deployment and maintenance. She also provided insights into custom software development, websites, web applications, mobile applications and business automation solutions.

The session encouraged students to focus on practical implementation, develop problem-solving abilities and continoously upgrade their technical skills according to changing industry requirements. Students were also guided on how internship experiences can contribute to their professional development and career opportunities.

A total of 34 students attended the session and participated in the learning activity.

5. Outcome of the Programme

The guest lecture provided students with valuable exposure to internships, software development and current industry practices. The session helped students understand the importance of applying academic knowledge to practical projects and developing industry-ready skills.

Students gained awareness of:

- The importance and benefits of internships for professional development.
- Practical aspects of software development and project implementation.
- Current industry expectations and required technical skills.
- Development of websites, web applications, mobile applications and customized software solutions.
- The importance of understanding client requirements and business needs.
- The role of practical projects and hands-on experience in career development.
- The need for continuous learning and skill enhancement in the IT industry.



4. Key Topics Covered

1. **Importance of Internships** – Understanding how internships provide practical exposure and help students gain experience in real-world working environments.
2. **Software Development Fundamentals** – Introduction to important stages and practices involved in developing software applications.
3. **Industry Requirements and Skills** – Understanding the technical and professional skills expected from students entering the IT industry.
4. **Web and Application Development** – Insights into websites, web applications, mobile applications and customized software solutions.
5. **Client Requirements and Business Solutions** – Understanding the importance of identifying client requirements and developing technology solutions according to business needs.
6. **Business Automation Solutions** – Understanding how software and technology can be used to automate business processes and improve efficiency.
7. **Practical Learning and Career Development** – Encouraging students to gain hands-on experience, build projects and continuously improve their technical knowledge.

6. Conclusion

The guest lecture on **"Internship/Software Development"** was organized on 06 October 2026 by the Department of Master of Computer Applications in association with the **AlgoriX** MCA Student Association. The session was delivered by **Mrs. Manaswi Gowalkar,** Founder and CEO of **NextVision** IT Solution.

The programme provided students with valuable insights into internships, software development, industry practices and career opportunities. The session helped bridge the gap between academic learning and industry requirements and encouraged students to develop practical skills, gain hands-on experience and prepare themselves for successful careers in the software and IT industry.

Department of Master of Computer Applications
in Association with **AlgoriX MCA Student Association**

Learn Today... Build Tomorrow

Guest Lecture on

Build, Understand, Innovate: Mobile App Development in AI Era

Date
10 October 2026

Students Present
38 Online + 11 Offline

Resource Person
Mr. Shailesh Sawant
Goelife Agritech India Pvt. Ltd.

Organized By
Department of Master of Computer Applications

In Association With
AlgoriX MCA Student Association

1. Introduction

The Department of Master of Computer Applications, in association with AlgoriX MCA Student Association, organized the guest lecture on 10 October 2026, delivered by Mr. Shailesh Sawant of Goelife Agritech India Pvt. Ltd.

The session focused on mobile app development in the AI era, practical modern development, AI's role in apps, innovation, and industry-oriented skills.



2. Objectives

- To introduce students to modern mobile app development.
- To understand the impact of AI in mobile applications.
- To explore the integration of AI in mobile apps.
- To learn about current trends and technologies.
- To encourage innovation and problem-solving skills.
- To provide industry-oriented practical insights.
- To raise awareness of career opportunities in mobile development and AI.

3. Proceedings of the Programme

Mr. Shailesh Sawant discussed the current trends in mobile app development, how AI transforms application design and development, and the fundamentals of mobile app development. He explained AI-powered features, user-oriented applications, user requirements and effective solutions. The session also highlighted the importance of continuous skill improvement and staying updated with emerging technologieses.

Students were encouraged to apply their academic knowledge to real-world app development and understand industry expectations.

4. Key Topics Covered

1. Introduction to Mobile Application Development
2. Mobile App Development in the AI Era
3. Integration of AI in Mobile Applications
4. Modern Development Practices
5. Build, Understand and Innovate
6. Real-World Applications and Use Cases
7. Industry Skills and Career Opportunities

5. Outcome of the Programme

Students gained awareness of:

- Mobile development fundamentals and current trends.
- AI in mobile apps and AI feature integration.
- Building innovative, user-oriented applications.
- Solving real-world problems and understanding industry expectations.
- Continuous skill development.
- Career opportunities in mobile development and AI.

6. Conclusion

The session provided insights into modern mobile application development, AI, innovation and industry practices, encouraging students to strengthen practical skills, explore emerging technologies, and develop innovative applications for real-world challenges.

Learn Build Grow

Department of Master of Computer Applications
In Association with AlgoriX MCA Student Association

Guest Lecture on
Build with AI
(Cloud & AI Landing Zones)

Date
24 October 2026

Students Present
31 Online + 10 Offline
(41 Total)

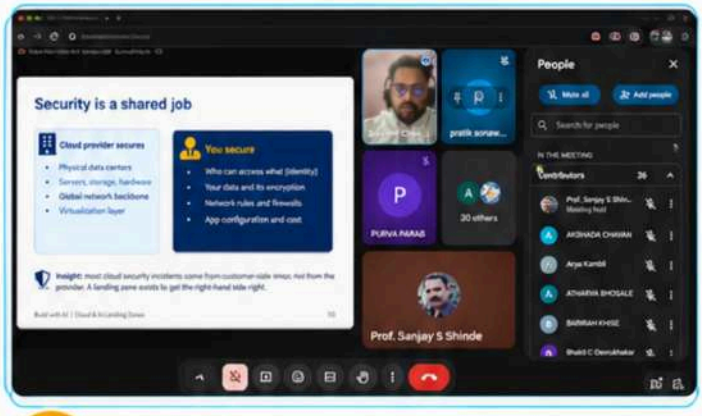
Resource Person
Mr. Sushant Chavan
Cloud Architect,
Searce Inc., Mumbai

Organized By
Department of Master of Computer Applications
In Association With
AlgoriX MCA Student Association

1. Introduction

The Department of Master of Computer Applications, in association with AlgoriX MCA Student Association, organized the guest lecture on **"Build with AI (Cloud & AI Landing Zones)"** on 24 October 2026. The session was delivered by **Mr. Sushant Chavan**, Cloud Architect, Searce Inc., Mumbai.

The lecture focused on the growing importance of Artificial Intelligence, Cloud Computing and AI-ready cloud infrastructure in modern technology environments. The session aimed to provide students with an understanding of how organizations build secure, scalable and well-structured cloud environments for developing and deploying AI solutions.



2. Objectives of the Guest Lecture

- To introduce students to the concepts of Cloud Computing and Artificial Intelligence.
- To understand the role of cloud platforms in developing and deploying AI solutions.
- To introduce the concept of Cloud & AI Landing Zones.
- To understand the importance of secure, scalable and well-structured cloud environments.
- To familiarize students with industry practices related to cloud and AI infrastructure.
- To provide practical insights into building AI solutions using cloud technologies.
- To create awareness about emerging career opportunities in Cloud Computing and Artificial Intelligence.

3. Proceedings of the Programme

The session commenced with a formal welcome and introduction of the resource person, **Mr. Sushant Chavan**, Cloud Architect, Searce Inc., Mumbai.

The resource person introduced students to the rapidly evolving ecosystem of Cloud Computing and Artificial Intelligence. He explained how cloud platforms provide the infrastructure, services and scalability required to develop, train and deploy modern AI applications.

A major focus of the session was on Cloud & AI Landing Zones. The resource person explained how organizations can establish a structured cloud foundation with appropriate architecture, security, governance, networking and resource management to support AI workloads.

The session also highlighted the importance of designing cloud environments that are secure, scalable, reliable and cost-effective. Students were introduced to practical industry perspectives and the role of cloud architects in planning and implementing cloud-based AI solutions.

The lecture encouraged students to explore the combination of AI and Cloud Computing and understand how these technologies are creating new possibilities for software development and enterprise applications.

4. Key Topics Covered

1. Introduction to Cloud Computing and AI
2. AI on Cloud Platforms
3. Cloud & AI Landing Zones
4. Cloud Architecture and Infrastructure
5. Security and Governance
6. Scalability and Cost Optimization
7. Industry Applications and Career Opportunities

5. Outcome of the Programme

The guest lecture provided students with valuable exposure to Cloud Computing, Artificial Intelligence and AI-ready cloud infrastructure. The session helped students understand how modern organizations utilize cloud technologies to build and deploy intelligent applications.

Students gained awareness of:

- Fundamentals of Cloud Computing and Artificial Intelligence.
- The role of cloud platforms in developing and deploying AI applications.
- The concept and importance of Cloud & AI Landing Zones.
- Cloud architecture, infrastructure, security and governance.
- Scalability, reliability and efficient resource utilization in cloud environments.
- Industry practices involved in implementing cloud-based AI solutions.
- Emerging technical and career opportunities in Cloud Computing and Artificial Intelligence.

6. Conclusion

The guest lecture on "Build with AI (Cloud & AI Landing Zones)" was organized on 24 October 2026 by the Department of Master of Computer Applications in association with the AlgoriX MCA Student Association. The session was delivered by Mr. Sushant Chavan, Cloud Architect, Searce Inc., Mumbai.

The programme provided students with valuable insights into Cloud Computing, Artificial Intelligence, cloud architecture and AI Landing Zones. The session enhanced students' awareness of modern cloud and AI technologies and encouraged them to explore emerging technologies and career opportunities in these rapidly growing domains.

Department of Master of Computer Applications
In Association with AlgoriX MCA Student Association

Learn Today... Build Tomorrow

Student Achievement

Talent Today... Success Tomorrow...

Student Wins Consolation Prize at 59th MU Youth Festival



Avishkar Rajendra Pedhambkar

Student Name
Avishkar Rajendra Pedhambkar

Department
Master of Computer Applications (MCA)

Institute
Gharda Institute of Technology & Management (GITM)

Competition
Story Writing (Group B – Hindi/English)

Achievement
Consolation Prize

Event
59th University of Mumbai Youth Festival



University of Mumbai
Department of Students' Development

Youth Festival

50th Inter-Collegiate / Institute / Department Youth Festival
(Final Round)
Academic Year 2026-27

Certificate of Merit

This is to certify that Mr. Pedhambkar Avishkar Rajendra of Gharda Institute of Technology, Lavel, Khed participated and secured CONSOLATION in Story Writing Group B (Hindi or English) competition at 59th Inter-Collegiate / Institute / Department Cultural Youth Festival (Final Round): 2026-27 organized by the University of Mumbai at on .

Mr. Nilesh Save
Cultural Co-ordinator,
University of Mumbai

Dr. Sunil Patil
Director,
Department of Students' Development,
University of Mumbai

Mumbai

About the Achievement

Avishkar Rajendra Pedhambkar, a student of the Master of Computer Applications (MCA) Department at Gharda Institute of Technology & Management (GITM), brought pride to the department by securing a **Consolation Prize** in Story Writing (Group B – Hindi/English) at the 59th University of Mumbai Youth Festival.

The achievement highlights Avishkar's creativity, literary skills, and interest in storyteling beyond academics. The University of Mumbai Youth Festival provides a platform for students to showcase their talents and express their ideas through various cultural and literary competitions.

A Proud Moment

This accomplishment is a proud moment for the MCA Department and reflects the importance of encouraging students to explore their creative abilities alongside their academic pursuits.

The department congratulates Avishkar on this achievement and wishes him continued success in his future endeavours.

Heartiest Congratulations!

Your Creativity Makes Us Proud!

Department of Master of Computer Applications
in Association with AlgoriX MCA Student Association

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Technical Article

By Dr.Poonam R. Shityalkar (HOD-MCA)

EMERGING IT TRENDS: SHAPING THE FUTURE OF TECHNOLOGY



Introduction

Information Technology (IT) is evolving rapidly and transforming the way people communicate, learn, work, and conduct business. Emerging technologies create opportunities for innovation, automation, and digital transformation. Understanding these developments is essential for students and professionals who wish to build successful careers in the IT industry.



Major Emerging IT Trends

a) Artificial Intelligence & Generative AI

Machines perform learning, problem-solving, decision-making and language tasks; generative AI creates text, images, code and other digital content.

b) Cybersecurity & Data Privacy

Protects systems, networks and data; approaches include AI-based threat detection, MFA, biometrics, encryption and Zero Trust.

c) Cloud Computing

Internet-delivered storage, databases, servers and software; platforms AWS, Microsoft Azure and Google Cloud for hosting, collaboration, backup and scalability.

d) Internet of Things (IoT)

Connected physical devices collect and exchange information through sensors and technologies.

e) Big Data & Data Analytics

Analyzes large datasets to find patterns, understand behaviour, predict trends and support decisions.

f) Blockchain Technology

Distributed ledger with cryptographic mechanisms for transparent, tamper-resistant records; used in digital transactions and supply chains.

g) Edge Computing

Processes data near the source, reducing latency; useful in real-time applications and IoT.

h) DevOps & Automation

Dev Ops

Combines development and operations to improve delivery; tools like Docker, Kubernetes, Jenkins and GitHub Actions.

Impact on Career Opportunities

Emerging technologies are creating opportunities for skilled IT professionals in various domains. Some promising career options include:

- AI/ML Engineer
- Data Analyst / Data Scientist
- Cybersecurity Analyst
- Cloud Engineer
- Full-Stack Developer
- DevOps Engineer
- IoT Developer
- Blockchain Developer



How Can Students Prepare for the Future?

1. Learn Python, Java and JavaScript.
2. Practise Data Structures and Algorithms.
3. Explore AI, Cloud and Cybersecurity.
4. Build real-world projects.
5. Join hackathons/workshops/coding competitions.
6. Complete relevant certifications and internships.
7. Build a professional portfolio.
8. Continuously update technical knowledge.



Challenges & Responsible Use

Although emerging technologies offer advantages, they also introduce challenges related to data privacy, cyber security, ethical AI, digital inequality, and employment patterns.

Let us use technology responsibly for a secure, equitable and sustainable digital future.

Conclusion

Emerging IT trends are transforming industries, MCA students can explore new technologies, strengthen technical skills and become future-ready IT professionals.

"Technology keeps evolving, and the future belongs to those who keep learning, adapting, and innovating."



Technical Article

By **Prof. Sanjay S. Shinde**
Department of MCA,
Teacher co-ordinator of AlgoriX



ZERO TRUST SECURITY:
NEVER TRUST, ALWAYS VERIFY

Rethinking Cybersecurity in the Digital World

Introduction

In today's interconnected world, cyber threats are becoming more sophisticated, making traditional security methods insufficient. The Zero Trust Security model offers a modern approach to cybersecurity based on one fundamental principle: **"Never Trust, Always Verify."** Instead of automatically trusting users or devices inside a network, Zero Trust requires every access request to be verified before granting permission.

What Is Zero Trust Security?

Zero Trust is a cybersecurity framework that assumes no user, device, or application should be trusted automatically, whether inside or outside an organization's network. Every access request must be authenticated, authorized, and continuously evaluated according to security policies. This approach helps prevent unauthorized access, data breaches, and the spread of cyberattacks.

Key Principles of Zero Trust

Verify Explicitly
Authenticate users and validate devices using identity, location, device health, and other relevant security signals.

Least Privilege Access
Give users only the minimum permissions required to perform their tasks.

Assume Breach
Operate with the assumption that an attacker may already be inside the network. Monitor activities and limit potential damage through segmentation and security controls.

Continuous Monitoring
Regularly evaluate access, detect unusual behaviour, and respond to potential threats.

How Does Zero Trust Work?

Consider a student accessing a college's online examination portal. Even after entering a valid password, the system may require multi-factor authentication (MFA), check the device's security status, and verify the student's access permissions. If suspicious activity is detected, access may be restricted or additional verification may be required.



Real-World Applications



Zero Trust is particularly useful in cloud computing, remote working environments, online banking, educational institutions, healthcare systems, and enterprise networks. It helps organizations protect sensitive information even when users access resources from different locations and devices.

Benefits and Challenges

Benefits
- Reduces the risk of unauthorized access
- Limits the impact of compromised accounts
- Improves visibility into network activity

Challenges
- Requires careful planning
- Needs appropriate security tools
- Continuous monitoring is essential
- Regular policy updates

Conclusion

Zero Trust Security represents a shift from trusting network boundaries to verifying every access request. As organizations increasingly adopt cloud services, remote access, and digital platforms, this model provides an important foundation for stronger cybersecurity. Ultimately, security is not about deciding whom to trust—it is about ensuring that every access request meets the required security standards.

Key Takeaway:
Trust should never be automatic; access should always be earned through verification.



Technical Article

By **Prof. Mangesh S. Thasale**
Department of MCA



GREEN COMPUTING: A VITAL STEP TOWARDS A SUSTAINABLE FUTURE

Smart Technology, Green Thinking, Sustainable Living

Green Computing and Environmental Protection

Green Computing refers to the environmentally responsible design, manufacturing, use, and disposal of computers and other IT resources. Its goal is to minimize environmental impact through energy-efficient technologies, responsible resource use, and proper electronic waste management.



Power Saving in Daily Computing Life

Switch off computers and monitors when not in use

- Enable Sleep Mode during short breaks
- Adjust screen brightness and choose energy-efficient devices
- Avoid unnecessary printing; prefer digital documents
- Maintain equipment and unplug chargers and peripherals when not required.



Sustainable Development and the 4R Principles

REDUCE

Minimize unnecessary electricity, paper, and resource consumption.

REUSE

Extend device life through reuse, repair, and refurbishment.

REFUSE

Avoid unnecessary purchases, excessive packaging, and disposable products.

RECYCLE

Use authorized e-waste collection and recycling facilities.

Conclusion

Environmental protection is a shared responsibility. As MCA students and future IT professionals, we should use technology with environmental awareness and social responsibility. Small actions—saving electricity, reducing paper use, extending device life, and recycling e-waste—can collectively make a significant difference.



Smart Technology, Green Thinking, Sustainable Living



Technical Article

By Prof. Sayali S. Ghadge
MCA Department

The AI Revolution: Rebuilding Technology from the Ground Up



How AI Is Reshaping Every Layer of the Technology Stack

Introduction

Technology has always been built in layers: hardware, software, data, and interfaces. AI is now changing every one of them at the same time. Chips are designed for AI workloads, software is written with AI assistance, and users interact with systems through natural language. This is not a new feature added on top. It is a rebuild of technology from the ground up.

What is the AI Revolution?

It is the move from rule-based computing, where humans write every instruction, to learning-based computing, where systems learn patterns from data and act on them. Like the internet and smartphones in earlier decades, AI is becoming a new foundation for other technologies.

How AI Is Rebuilding Each Layer

1 Hardware Layer
AI-optimized infrastructure: GPUs, AI accelerators, specialized data centers, and on-device AI chips in phones and laptops.

2 Data Layer
From storage to intelligence: data trains models, and data quality affects AI quality.

3 Model Layer
The new core engine: large language and multimodal models handle text, images, audio, and code.

4 Software Layer
From programming to prompting: AI writes, tests, and reviews code while developers describe intent.

5 Interface Layer
From apps to AI agents: users communicate with systems that plan and complete multi-step tasks.

How Does the Rebuild Look in Practice?

A software team building a feature can use an AI assistant to suggest code, generate test cases, and flag possible vulnerabilities. The developer guides, reviews, and secures the work; speed improves, but human judgment remains essential.

Developer Intent → AI Generates Code/Tests → Human Review → Secure Deployment

Real-World Applications



- **Software Development** (AI-assisted coding, automated testing, code review)
- **Cybersecurity** (threat detection, anomaly analysis, automated incident response)
- **Education** (adaptive learning, AI tutors, personalized assessment)
- **Healthcare** (diagnostic support, medical imaging, drug discovery)
- **Business Operations** (forecasting, automation, intelligent customer support)
- **Cloud and Edge Computing** (AI in data centers and on devices)

AI creates value wherever there is data to analyze, work to automate, or content to generate.

Benefits

- Faster development and decision-making
- Automation of repetitive work
- Technology accessible to non-experts
- Personalized user experiences
- New skills, roles, and industries



Challenges

- Hallucinations and reliability issues
- Security risks such as prompt injection, data leakage, and AI-powered attacks
- Privacy, bias, and accountability concerns
- Skill gaps and need for reskilling
- High energy and infrastructure demands
- Regulation and governance still catching up



Conclusion

When a foundation changes, everything built on it changes too. AI is rebuilding hardware, data, software, and interfaces into a new kind of technology stack. As systems become more autonomous, trust, security, and human oversight become as important as capability. Those who build AI skills early and use them responsibly will lead this transition.

Key Takeaway: ***AI is not just another tool in technology. It is the new foundation. Build on it wisely, secure it carefully, and keep humans in control.***

Other (Non-technical)

Mind.exe ने काम करणे थांबवले आहे का?

Assignments
Exams
Placements
Overthinking
Reels...

ताण, टेन्शन आणि त्यावर आपले "डीबगिंग" उपाय

कधी असे झालंय का?

- रात्री २ वाजता कोड चालत नाही आणि एक सेमीकोलन शोधायला तासभर जातो 😵
- उद्या सबमिशन आहे आणि तुम्ही अजून "Hello World" वरच आहात
- प्लेसमेंटचा विचार आला की पोटात गोळा येतो
- मोबाईल बघायला उचलला आणि २ तास रील्स बघण्यात गेले 📱

मग मित्रा/मैत्रिणी, तुम्ही एकटे नाही!

प्रत्येक MCA विद्यार्थ्याने हे अनुभवले आहे. पण एक लक्षात ठेवा: कोड जसा बग्समुळे अडतो, तसे मन ताणामुळे अडते. आणि दोन्हीवर उपाय आहे: **डीबगिंग!** 🛠️

💡 ताण म्हणजे नेमके काय?

थोडा ताण म्हणजे Wi-Fi चा बूस्टर, तो आपल्याला वेळेत काम पूर्ण करायला मदत करतो. पण सतत ताण म्हणजे १०० टॅब्स उघडलेला लॅपटॉप: सगळे काही स्लो, हँग आणि गरम! 🔥

⚠️ धोक्याचे इशारे (Warning Signs):
झोप उडणे, सारखी चिडचिड, कशातच मन न लागणे, सतत थकवा.

⚙️ तुमचे "Stress Debugging Toolkit"

१ झोप = Recharge



मोबाईल १% वर असताना तुम्ही चार्जिंगला लावता ना? मग स्वतःला का नाही? रोज ७–८ तास झोप घ्या. रात्र जागवून लिहिलेला कोड सकाळी स्वतःलाच समजत नाही! 😅

२ टू-डू लिस्ट बनवा



मोठा प्रोजेक्ट म्हणजे मोठी फाईल, तिचे छोटे मॉड्युल्स करा. एकेक टास्क पूर्ण झाले की मिळणारे "टिक" चे समाधान जबरदस्त असते 👍

३ स्क्रीन ब्रेक

(Ctrl + Alt + Relax)



दर तासाला ५ मिनिटे उठा, पाणी प्या, खिडकीतून बाहेर बघा. आणि इतरांच्या इन्स्टा पोस्टवरचे "परफेक्ट लाईफ" बघून स्वतःची तुलना करू नका. ते फिल्टर आहेत, खरे आयुष्य नाही! 😉

४ हालचाल करा



रोज २०–३० मिनिटे चालणे, योगासने, क्रिकेट किंवा बॅडमिंटन. शरीर हलले की मन हलके होते. कॅन्टीनपर्यंत चालत जाणे ही पण एक्सरसाइज धरू शकता 😄

५ इंधन चांगले भरा



रोज मॅगी आणि चहा हे काही "बॅलन्स्ड डाएट" नाही! 🍜 वेळेवर जेवा, फळे खा, पाणी प्या. गाडीला चांगले पेट्रोल लागते, तसेच तुमच्या मेंदूलाही.

६ मनमोकळे बोला



मित्र, घरचे किंवा शिक्षक यांच्याशी बोला. प्रॉब्लेम फक्त डोक्यात ठेवला तर तो वाढतो, पण शेअर केला की हलका होतो. "मला मदत हवी आहे" असे म्हणणे ही कमजोरी नाही, ते खरे धैर्य आहे 💪

७ छंद म्हणजे तुमचा "Safe Mode"



गाणी, चित्रकला, फोटोग्राफी, लेखन, गेमिंग (मर्यादित हं!). जे तुम्हाला आनंद देते त्यासाठी रोज थोडा वेळ काढाच.

८ अपयश म्हणजे फक्त एक Error Message



कोड फेल झाला? परीक्षेत कमी गुण? मुलाखतीत रिजेक्ट? काळजी नको! Error म्हणजे शेवट नाही, ती फक्त पुढे काय सुधारायचे ते सांगणारी सूचना आहे. वाचा, शिका आणि पुन्हा **Run** करा! ▶️

🌬️ ५ मिनिटांचा "Reboot Technique"

परीक्षेआधी हार्ट बीट वाढतेय? हे करून बघा:

1. डोळे मिटा
2. ४ सेकंद नाकाने श्वास आत घ्या
3. ४ सेकंद थांबा
4. ६ सेकंद हळूहळू बाहेर सोडा
5. हे ५ वेळा करा



झाले! तुमचा मेंदू रिस्टार्ट झाला 🔄

💗 कधी मदत घ्यावी?

जर उदासी, चिंता किंवा नकारात्मक विचार अनेक आठवडे जात नसतील आणि रोजच्या कामावर परिणाम करत असतील, तर गप्प बसू नका. कॉलेजचे समुपदेशक, विश्वासू शिक्षक किंवा मानसोपचार तज्ज्ञ यांच्याशी नक्की बोला. लॅपटॉप बिघडला तर आपण सर्व्हिस सेंटरला जातो ना? मग मन असेल तर तज्ज्ञांकडे जाणे तर त्याहूनही महत्त्वाचे! 💙

"Code सांभाळा, पण स्वतःला पण सांभाळा!"

तुम्ही तुमच्या प्रोजेक्टपेक्षा जास्त मौल्यवान आहात. 🌟

Team AlgoriX
Code • Analyse • Innovate • Elevate



Mr. Sanjay S. Shinde
Assistant Professor
MCA Department
AlgoriX Co-ordinator

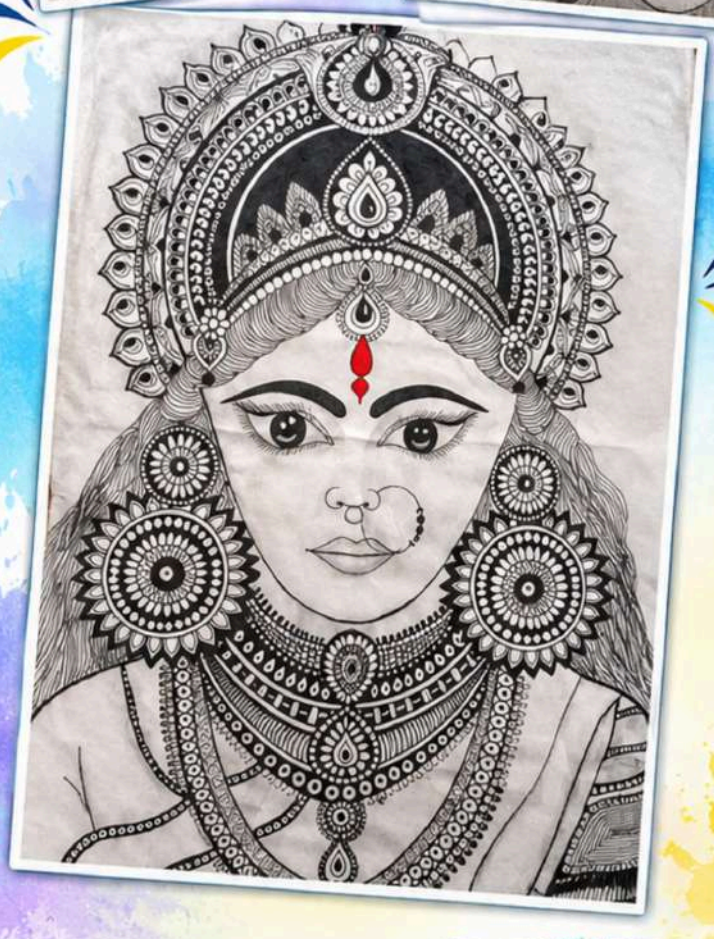
Other (Non-technical)



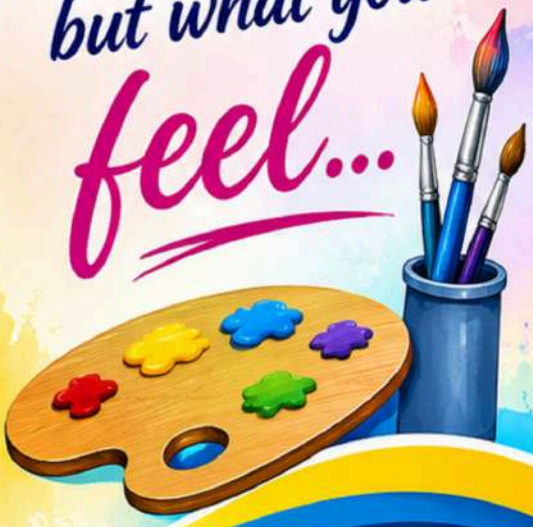




Mast. Sakshi Birvatkar
FYMCA



Art is not just what you see, but what you feel...



Create · Express · Inspire

Other (Non-technical)

STUDENT ACTIVITIES

Learning together • Sharing ideas • Building confidence

01 GROUP DISCUSSION



GROUP 1

Shravani Salunkhe

Huda Surve • Meraj Kurawle

GROUP 2

Yukta Mane • Manasi Dhalwalkar

Akshada Chavan • Suhani Ambre

02 STUDENT PRESENTATION



PRESENTED BY

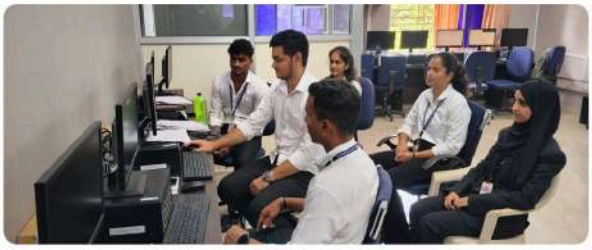
Purva Parab

Akshda Chavan

Arpita Borkar

Sharing knowledge
and ideas with confidence.

03 PRACTICAL DEMONSTRATION



DEMONSTRATED BY **Meraj Kurawle**

04 GUESS THE OUTPUT ACTIVITY





ACTIVITY BY

Mohini & Shravani

LEARN • DISCUSS • PARTICIPATE • GROW

AlgoriX

Code analyse Innovate Elevate

Thank You!

Heartfelt thanks to all who have supported and contributed to this edition of our AlgoriX E-Magazine!

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Vice-President	:	**Suhani Ambre** (FY MCA)
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Joint Secretary	:	**Meraj Shoukat Kurawale** (FY MCA)
Treasurer	:	**Siddharth Sandeep Salvi** (SY MCA), **Purva Narayan Parab** (FY MCA)

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- **Innovation & Projects –** Prem Dinesh Mhade, Zaiba Nadim Parkar

2. Event Management Team

- **Event Operations –** Gayatri Anil Hatkar, Pranjal Prashant Vinchu, Manasi Rajesh Dhalwalkar
- **Anchoring & Hosting –** Priya Bavkar, Suhani Santosh Ambre
- **Decoration –** Rasik Santosh Mahadik, Janhavi Ajit Pawar

3. Media, Branding & Design Team

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- Raj Sandesh Shigvan
- Shravani Santosh Salunkhe

4. Documentation Team

- Kanchan Sable
- Prasenjit Shivraj Kolekar
- Huda Sameer Surve



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Prof. Sanjay S. Shinde
MCA Department
Teacher Co-ordinator AlgoriX

Together... for a Smarter Tomorrow