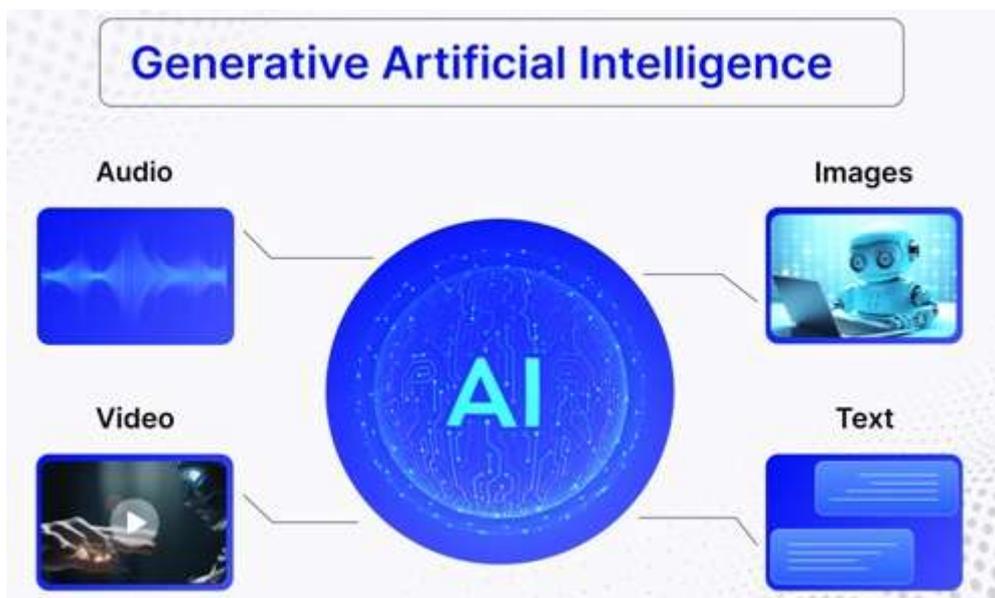


Module 1: Introduction to Generative AI and its Role in Learning

- ❖ What is Generative AI? Basics and Real Life Examples.
- ❖ AI in Business and Education: How it's changing learning and work
- ❖ Overview of AI Tools: Gamma, GPT, Copilot, Gemini and Deep Seek
- ❖ Ethical & Responsible Use of AI for Students

What is Generative AI?

- Generative artificial intelligence (generative AI) is a type of AI that can create new content and ideas, including conversations, stories, images, videos, and music.



- It can learn human language, programming languages, art, chemistry, biology, or any complex subject matter.
- It reuses what it knows to solve new problems. For example, it can learn English vocabulary and create a poem from the words it processes.
- Your organization can use generative AI for various purposes, like chat bots, media creation, product development, and design.

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What is the difference between AI and Generative AI?

Artificial intelligence is the broader concept of making machines more human-like.

It includes everything from smart assistants like Alexa, chatbots, and image generators to robotic vacuum cleaners and self-driving cars.

Generative AI is a subset that generates new content meaningfully and intelligently.

When was generative AI created?

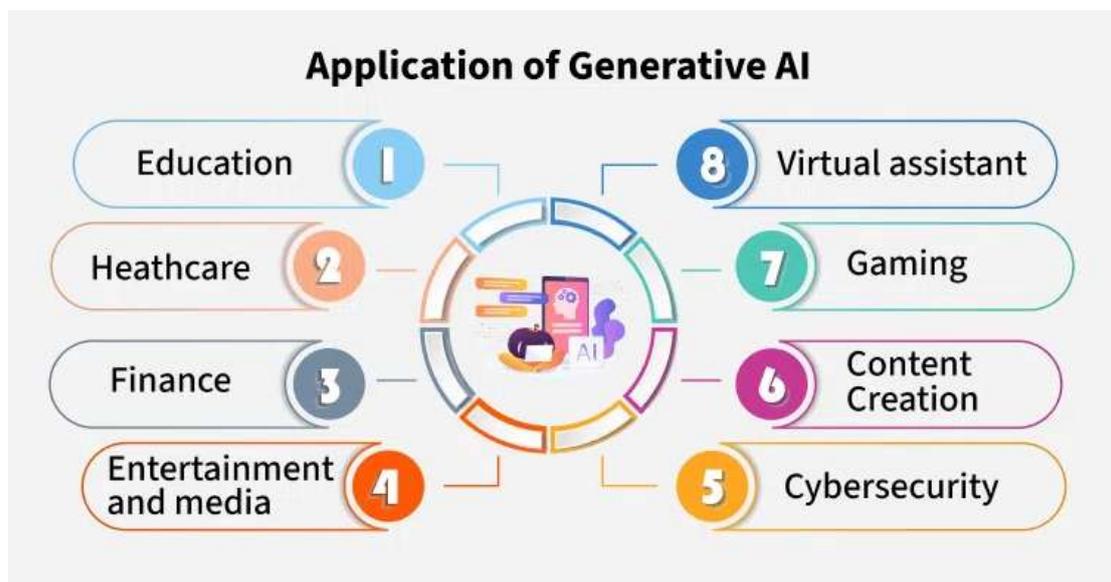
Generative AI emerged in the late 2010s with advancements in deep learning, particularly with models like Generative Adversarial Networks (GANs) and transformers.

Advances in cloud computing have made generative AI commercially viable and available since 2022.

The fundamental difference between traditional AI and generative AI is creation versus classification. Traditional (discriminative) AI might identify a picture as a "cat," while generative AI can draw a brand-new picture of a "cat flying a spaceship"

Real-Life Examples

Generative AI is used in several applications and industry solutions:



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Content Creation Tools:

- **Text Generation:** Tools such as Chat GPT or Gemini can draft emails, write articles, summarize reports, or brainstorm creative ideas.
- **Image Generation:** Applications such as Mid journey, DALL-E, and Stable Diffusion create images and artwork from text descriptions or edit existing visuals.
- **Audio/Music Creation:** AI can compose music, synthesize human voices for voiceovers, or generate sound effects.
- **Software Development:** AI assistants help developers by generating code, automating tests, debugging code, and creating documentation, which speeds up development.
- **Customer Service:** AI-powered chatbots and virtual assistants provide 24/7 customer support, make product recommendations, answer queries, and guide users through problem-solving.



- **Healthcare and Medicine:** Generative AI analyzes medical data for diagnoses, designs drug candidates, and creates synthetic patient data for training AI models.
- **Design and Manufacturing:** Architects and designers use GenAI to generate design options, while manufacturers use it to optimize the design of parts or predict equipment failures.



- **Finance:** In finance, generative AI helps detect fraud and offers personalized financial advice and investment strategies.

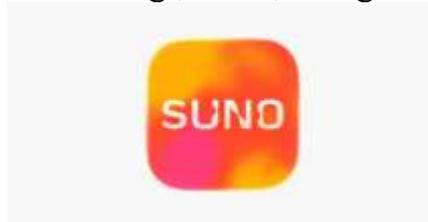
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- Generate text, summarise, translate, answer questions
2. **Image Generation Models** – e.g., DALL·E, Midjourney, Stable Diffusion



- Generate images from text prompts
3. **Audio & Music Models** – e.g., Suno, Google MusicLM



- Create songs, sound effects
4. **Video Generation Models** – e.g., OpenAI Sora



- Create videos from text description
5. **Code Generation Models** – e.g., GitHub Copilot
- Help write programming code



What Makes Generative AI Powerful?

- **Creativity** – It can produce original ideas and outputs
- **Speed** – Can generate content in seconds
- **Automation** – Handles repetitive tasks
- **Personalisation** – Creates content tailored to user needs

Role of AI in Education



AI is transforming education by automating administrative tasks for teachers, personalizing learning experiences for students through adaptive software, and improving institutional management.

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How AI is used in education

For students:

- **Personalized learning:** AI-driven software can tailor lessons to a student's individual pace and learning level, providing customized quizzes and resources.
- **Adaptive tutoring:** Systems can provide adaptive support to help students grasp difficult concepts.
- **Chatbots:** AI chatbots can answer student questions and provide instant support.

For teachers:

- **Automating tasks:** AI can handle repetitive jobs like grading and attendance tracking, freeing up time for more direct student engagement.
- **Lesson planning:** AI can assist in designing lessons and curriculum that align with specific standards or student needs.
- **Data analysis:** AI analyzes student performance data to help teachers identify trends and areas where students need more support.

For institutions:

- **Administrative support:** AI can help with school-wide operations like scheduling, admissions, and identifying students who may be at risk.
- **Classroom management:** Some platforms use AI to gamify behavior management by tracking engagement and rewarding positive actions.

Benefits and considerations

Benefits:

- Increases efficiency for teachers.
- Provides personalized and adaptive learning experiences for students.
- Offers data-driven insights to improve instruction.

Considerations:

- **Cost:** Implementing large AI systems can be expensive.
- **Human connection:** AI lacks the emotional connection that teachers provide, which is crucial for developing life skills.

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- **Ethics and equity:** Responsible use is necessary to prevent cheating and ensure fair access to AI tools.
- **Skill focus:** Educators must adapt to focus on skills that AI cannot easily replicate, especially as AI capabilities advance.

How AI is changing learning

- **Personalized learning:** AI tailors educational content to a student's individual pace, style, and needs, leading to improved engagement and understanding.
- **Automated administrative tasks:** AI handles tasks like grading, scheduling, and report generation, freeing up educators' time to focus on student support and higher-level instruction.
- **Enhanced tutoring:** AI-powered tutors can provide instant feedback and support 24/7, helping students with specific questions and guiding them toward finding their own answers through methods like the Socratic approach.
- **New skills focus:** With AI handling rote tasks, the emphasis in education is shifting from information recall to higher-order skills like critical thinking, creativity, and problem-solving.

How AI is changing work

- **Task automation:** AI automates many routine and repetitive tasks across various industries, which can increase efficiency but may displace certain jobs.
- **Augmented capabilities:** AI acts as a tool to enhance human abilities, providing insights and support for roles in areas like data analysis, content creation, and strategic planning.
- **Evolving job roles:** The rise of AI is shifting the skills employers seek. There is a greater demand for skills that complement AI, such as creativity, emotional intelligence, ethical judgment, and complex problem-solving.
- **New job creation:** The development, implementation, and maintenance of AI systems are creating new jobs in fields like data science, machine learning, and AI ethics.

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Overview of AI tools: Gamma,GPT,Copilot,Gemini and DeepSeek

1. Gamma



What it is:

Gamma is an **AI-powered presentation, document, and webpage creator.**

It helps users generate visually appealing slides and reports quickly.

Key Features:

- Create **presentations, documents, and webpages** with simple prompts.
- Auto-design templates and layouts.
- Convert plain text into slides instantly.
- Add charts, images, and redesign slides in one click.
- Good for students, business professionals, and educators.

Uses:

- Class presentations
- Business pitch decks
- Report creation
- Visual storytelling

2. GPT (ChatGPT / OpenAI GPT Models)



What it is:

GPT stands for **Generative Pre-trained Transformer**, a family of advanced AI models by OpenAI.

GPT can understand and generate human-like text and images.

Key Features:

- Answer questions and explain concepts.
- Write essays, reports, and emails.
- Generate code, debug programs.
- Produce images (with DALL·E models).
- Personal tutor for learning, assignments, and research.

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Uses:

- Learning & Education
- Content creation
- Coding & software development
- Business communication
- Creative writing

3. Microsoft Copilot



What it is:

Copilot is Microsoft's AI assistant integrated into **Windows, Office 365, Edge, GitHub**, and cloud tools.

Key Features:

- Works inside **Word, PowerPoint, Excel, Outlook**.
- Auto-creates PPT slides from text.
- Summaries emails & generates drafts.
- Helps with Excel formulas and data analysis.
- GitHub Copilot helps developers write code faster.

Uses:

- Office tasks automation
- Coding assistance
- Summarizing, rewriting, and brainstorming
- Business productivity

4. Google Gemini (grmini)



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(You likely meant **Gemini**, sometimes typed as “grmini”)

What it is:

Gemini is Google’s advanced AI model integrated into **Google Workspace**, Android, and Google Search.

Key Features:

- Works in **Docs, Sheets, Gmail, Slides**.
- Supports multimodal inputs: text, images, video.
- Creates notes, summaries, and answers questions.
- Generates images and helps with coding using **Gemini Code Assist**.

Uses:

- Education & research
- Business tasks
- Writing & editing
- Image generation
- Coding support

5. DeepSeek



What it is:

DeepSeek is a **high-performance, low-cost AI model** known for speed and efficiency.

It is popular for coding, reasoning, and technical problem-solving tasks.

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Key Features:

- Very fast and lightweight.
- Strong in math, coding, and structured tasks.
- Often used as an alternative to GPT for efficiency.
- Works well for professional and academic tasks.

Uses:

- Coding & debugging
- Research assistance
- Logical reasoning tasks
- Cost-effective AI workflows

Ethical and Responsible use of AI for student

- To use AI ethically as a student, always treat it as a tool to augment, not replace, your own work, while ensuring transparency, accuracy, and academic integrity.
- This means critically evaluating AI output, citing its use, protecting personal data, and checking for biases.
- Always adhere to your institution's specific policies, as rules for AI usage can vary significantly between courses and assignments.

Before you use AI

Understand your institution's policy:

Check your school's guidelines on AI use, as they are the most important rules to follow

Know the difference between ethical and unethical use:

Understand that using AI to generate an entire essay is unethical, but using it to brainstorm or check grammar is often acceptable

Protect your privacy:

Do not input any personal information, such as your full name, address, or grades, into AI tool

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While using AI

Use AI as a research and brainstorming partner:

Use it to simplify complex topics, overcome writer's block, or generate practice questions

Critically verify the output:

AI can produce incorrect information, so always fact-check its responses and use it to supplement your own research, not as a sole source

Avoid using it to plagiarize:

Do not copy AI-generated text directly. Instead, use it for inspiration or to help you rephrase your own ideas

Check for bias:

Be aware that AI can perpetuate biases found in its training data and review the output for fairness.

After using AI

Cite your use:

Disclose when and how you used AI, even for tasks like rephrasing. This can be done in an acknowledgments or methods section, depending on the assignment

Maintain authorship:

The AI should not be listed as an author. You remain responsible for the final work and its content.

Review your work for originality:

Make sure your own thoughts, analysis, and voice are still present and that the work is your own intellectual contribution

Module 2: Exploring AI Tools for Academic & Productivity Tasks

- ❖ **GPT (ChatGPT, OpenAI):** Writing essays, summarizing articles, and brainstorming ideas
- ❖ **Copilot (Microsoft AI):** Enhancing productivity in Word, Excel, and PowerPoint
- ❖ **Gemini (Google AI):** Research assistance, quick explanations, and data insights
- ❖ **Deepseek:** AI for searching and analyzing academic and business trends

Exploring AI Tools for Academic & Productivity Tasks

❖ Introduction to AI Tools in Education and Productivity

Artificial Intelligence (AI) tools are software applications that use machine learning, natural language processing (NLP), and large language models (LLMs) to assist users in completing tasks more efficiently. In academic and professional environments, AI tools are increasingly used to enhance learning, research, writing, and productivity.

Artificial Intelligence (AI) tools are transforming the way students, educators, and professionals learn, research, and work. In academics and productivity-oriented environments, AI tools help in writing, research, data analysis, collaboration, and decision-making.

GPT (ChatGPT, OpenAI): Writing essays, summarizing articles, and brainstorming ideas

Overview of GPT (ChatGPT – OpenAI)

GPT (Generative Pre-trained Transformer) is an AI-based language model developed by OpenAI. ChatGPT is a conversational interface built on GPT that allows users to interact using natural language.

Key Characteristics of ChatGPT

- Understands questions and instructions written in natural language
- Generates coherent, context-aware responses
- Can adapt tone and style (academic, professional, simple)
- Supports multiple domains such as education, business, technology, and research

Academic Applications of ChatGPT

1. Writing Essays and Assignments

ChatGPT can assist students in essay writing by:

- Generating essay outlines and structures
- Writing introductions, conclusions, and body paragraphs
- Improving grammar, vocabulary, and sentence flow
- Rewriting content in a formal academic tone

Example Uses:

- Writing essays on management, computer science, or social science topics
- Drafting reports, case studies, and project documentation
- Converting rough ideas into well-structured academic content

Note: Students should use ChatGPT as a support tool, not for direct copying, to avoid plagiarism.

2. Summarizing Articles and Study Material

ChatGPT is highly effective in summarization tasks.

It can:

- Summarize long research papers into short notes
- Create bullet-point summaries for quick revision
- Simplify complex academic language
- Extract key points and conclusions

Academic Benefits:

- Saves time while studying large volumes of material
- Helps in exam preparation and revision
- Improves understanding of complex topics

3. Brainstorming Ideas

ChatGPT supports creative and analytical thinking by generating ideas.

It can be used for:

- Research topic selection
- Project ideas for BBA, BCA, MBA, and engineering students
- Seminar and presentation topics

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- Case study and business model ideas

Examples:

- Brainstorming innovative startup ideas
- Generating research questions
- Exploring multiple perspectives on a topic

Productivity Applications of ChatGPT

4. Time Management and Planning

ChatGPT helps improve productivity by:

- Creating daily, weekly, and study schedules
- Prioritizing tasks
- Breaking large tasks into smaller actionable steps

Use Case:

- Study planning during exams
- Managing academic projects and deadlines

5. Note-Making and Organization

ChatGPT can:

- Convert raw content into structured notes
- Create headings, subheadings, and bullet points
- Generate revision-friendly study notes

This is particularly useful for:

- Lecture notes
- Self-study material
- Quick reference guides

6. Drafting Emails and Documents

For academic and professional communication, ChatGPT can:

- Draft formal emails to teachers, institutions, or companies
- Create resumes, SOPs, and cover letters
- Improve clarity and professionalism in written communication

❖ Advantages of Using ChatGPT for Academics

- Saves time and effort
- Enhances writing quality
- Encourages idea generation
- Improves understanding through simplified explanations
- Supports self-paced learning

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❖ Limitations of ChatGPT

Despite its benefits, ChatGPT has certain limitations:

- May generate incorrect or outdated information
- Lacks real-time data access
- Cannot replace critical thinking and originality
- Risk of over-dependence by students

❖ Ethical and Responsible Use of AI Tools

Students must use AI tools ethically.

Guidelines for Responsible Use:

- Use AI as a learning aid, not a shortcut
- Always verify information from reliable sources
- Avoid plagiarism and academic dishonesty
- Acknowledge AI assistance when required

❖ Role of ChatGPT in Future Education

AI tools like ChatGPT are expected to play a significant role in the future of education by:

- Supporting personalized learning
- Assisting teachers in content creation
- Enabling smarter study methods
- Bridging gaps in understanding

However, human judgment, creativity, and ethical awareness will remain essential.

Copilot (Microsoft AI): Enhancing productivity in Word, Excel, and PowerPoint

Introduction to Microsoft Copilot

Microsoft Copilot is an AI-powered assistant integrated into Microsoft 365 applications such as **Word, Excel, and PowerPoint**. It uses advanced Artificial Intelligence and Large Language Models (LLMs) to help users create content, analyze data, and design presentations more efficiently.

Copilot works directly inside Microsoft apps, allowing users to interact with AI using natural language commands (prompts). It is designed to improve productivity, accuracy, and creativity in academic, professional, and business environments.

Key Features of Microsoft Copilot

- Integrated with Microsoft 365 apps
- Uses natural language prompts
- Automates repetitive tasks
- Enhances content quality and data insights

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- Saves time and improves efficiency

Microsoft Copilot in Word

Microsoft Copilot in Word helps users create, edit, and improve documents quickly and professionally.

1. Writing and Drafting Content

Copilot can:

- Generate complete documents from short prompts
- Write essays, reports, letters, and project documentation
- Create structured content with headings and subheadings

Example:

"Create a 1000-word report on Digital Marketing trends"

2. Editing and Improving Documents

Copilot assists in:

- Grammar and spelling correction
- Improving sentence clarity and tone
- Rewriting content in formal or academic language
- Summarizing long documents

Academic Benefits:

- Improves writing quality
- Saves time in editing
- Helps students maintain a professional tone

Microsoft Copilot in Excel

Copilot in Excel helps users analyze, understand, and visualize data without advanced technical skills.

1. Data Analysis and Insights

Copilot can:

- Analyze large datasets
- Identify trends, patterns, and outliers
- Answer questions using natural language

Example:

"Analyze sales data and show monthly growth"

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2. Formula Generation and Automation

Copilot helps users by:

- Suggesting correct Excel formulas
- Explaining formulas in simple language
- Automating calculations and data cleaning

Examples:

- Generating SUM, AVERAGE, IF, VLOOKUP formulas
- Explaining complex formulas step-by-step

3. Data Visualization

Copilot can:

- Create charts and graphs automatically
- Suggest the best chart type
- Summarize insights in text form

Benefits:

- Makes data easier to understand
- Useful for academic projects and business reports

Microsoft Copilot in PowerPoint

Copilot in PowerPoint helps users design impactful presentations quickly.

1. Creating Presentations

Copilot can:

- Create complete presentations from prompts
- Convert Word documents into slides
- Generate slide titles and bullet points

Example:

"Create a presentation on Artificial Intelligence in Education"

2. Design and Visual Enhancement

Copilot helps with:

- Slide layout and design suggestions
- Consistent formatting
- Improving visual appeal

This is especially helpful for:

- Seminar presentations
- Classroom lectures
- Business meetings

3.Speaker Notes and Summaries

Copilot can:

- Generate speaker notes
- Summarize slides for quick revision
- Suggest talking points for presentations

Academic and Professional Use Cases

- Writing assignments and research reports in Word
- Data analysis and project work in Excel
- Creating seminar and viva presentations in PowerPoint
- Business reporting and professional documentation

❖ Advantages of Microsoft Copilot

- Seamless integration with Microsoft 365
- Increases productivity and efficiency
- Reduces manual effort
- Improves accuracy and presentation quality
- Suitable for students and professionals

❖ Limitations of Microsoft Copilot

- Requires Microsoft 365 subscription
- Depends on data quality
- May generate incorrect insights if prompts are unclear
- Cannot replace human judgment

❖ Ethical and Responsible Use

Students and professionals should:

- Use Copilot as a support tool, not a replacement
- Verify generated content and data
- Avoid plagiarism
- Follow institutional and organizational guidelines

❖ Future Scope of Microsoft Copilot

Microsoft Copilot is expected to:

- Enhance personalized learning
- Support smarter business decision-making
- Automate more complex tasks
- Play a key role in AI-driven workplaces

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Gemini (Google AI): Research assistance, quick explanations, and data insights

Introduction to Gemini (Google AI)

Gemini is Google's advanced Artificial Intelligence (AI) model designed to support users in research, learning, content creation, and data analysis. It is developed by Google and integrated with Google's ecosystem, including Search, Docs, Gmail, Sheets, and other Google Workspace tools.

Gemini is especially useful for **students, researchers, educators, and professionals** who require quick explanations, reliable research assistance, and meaningful data insights.

Key Features of Gemini (Google AI)

- Advanced natural language understanding
- Strong research and information retrieval capabilities
- Quick explanations of complex topics
- Data analysis and insight generation
- Integration with Google tools and services

Gemini as a Research Assistance Tool

Gemini helps users throughout the research process.

1. Topic Exploration and Background Study

Gemini can:

- Explain research topics in simple language
- Provide background information on academic subjects
- Suggest subtopics and research directions
- Help refine research questions

Example:

"Explain Blockchain technology for a beginner"

2. Literature Review Support

Gemini assists in:

- Summarizing articles and reports
- Highlighting key concepts and findings
- Explaining difficult academic terms
- Organizing information logically

Academic Benefits:

- Saves time during literature review
- Improves understanding of scholarly content
- Helps students prepare research notes

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Gemini for Quick Explanations

One of Gemini's strongest capabilities is providing fast and clear explanations.

1. Concept Simplification

Gemini can:

- Break down complex theories into easy steps
- Explain technical topics with examples
- Answer "what", "why", and "how" questions

Examples:

- Explaining AI, Cloud Computing, Blockchain, Economics concepts
- Clarifying formulas, definitions, and processes

2. Learning Support for Students

Gemini helps students by:

- Providing step-by-step explanations
- Giving examples and real-life applications
- Supporting self-paced learning

This is useful for:

- Exam preparation
- Homework help
- Revision before tests

Gemini for Data Insights

Gemini also supports basic data understanding and analysis.

1. Understanding Data and Trends

Gemini can:

- Interpret data summaries
- Explain trends and patterns in simple terms
- Provide insights based on given data

Example:

"Explain the trend shown in this sales data"

2. Support with Google Sheets and Analytics

When integrated with Google tools, Gemini can:

- Help analyze spreadsheet data
- Suggest formulas and calculations
- Summarize insights from charts and tables

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Benefits:

- Makes data analysis easier for non-technical users
- Useful for academic projects and business analysis

Academic and Professional Use Cases

- Research projects and dissertations
- Assignment and report preparation
- Understanding complex academic topics
- Data analysis for case studies
- Business and market research

❖ Advantages of Gemini (Google AI)

- Fast and accurate explanations
- Strong research-oriented responses
- Integration with Google ecosystem
- User-friendly and accessible
- Supports multiple subjects and domains

❖ Limitations of Gemini

- May not always provide citation-ready academic references
- Requires internet connectivity
- Depends on quality of prompts
- Cannot replace deep critical thinking

❖ Ethical and Responsible Use of Gemini

Responsible use is essential in academics.

Guidelines:

- Use Gemini as a research assistant, not a replacement
- Cross-check important academic information
- Avoid plagiarism
- Follow institutional AI usage policies

❖ Future Scope of Gemini in Education and Research

Gemini is expected to:

- Enhance AI-powered search and research
- Support personalized learning experiences
- Improve data-driven decision-making
- Play a key role in digital education and workplaces

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Deepseek: AI for searching and analyzing academic and business trends

Introduction to DeepSeek AI

DeepSeek is an Artificial Intelligence (AI)–powered tool designed to support **advanced searching, research analysis, and trend identification** in academic and business domains. It leverages large language models and data analysis techniques to process vast amounts of information and generate meaningful insights.

DeepSeek is particularly useful for **students, researchers, analysts, and business professionals** who need to study trends, patterns, and emerging developments across industries and academic fields.

Key Features of DeepSeek AI

- AI-powered intelligent search
- Academic and business trend analysis
- Fast processing of large data sources
- Insight generation and pattern recognition
- Support for research-oriented tasks

DeepSeek for Academic Searching

DeepSeek enhances academic research by improving how information is searched and analyzed.

1. Smart Academic Search

DeepSeek can:

- Search academic topics efficiently
- Identify key themes and concepts
- Provide concise explanations of research areas
- Assist in finding relevant study directions

Example:

"Analyze recent trends in Artificial Intelligence research"

2. Research Support and Analysis

DeepSeek helps researchers by:

- Summarizing large volumes of academic content
- Identifying frequently discussed topics
- Highlighting emerging research areas
- Supporting literature review preparation

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Academic Benefits:

- Saves research time
- Improves understanding of subject trends
- Helps in framing research objectives

DeepSeek for Business Trend Analysis

DeepSeek is widely used for analyzing business and market trends.

1. Market and Industry Trend Identification

DeepSeek can:

- Analyze industry data and reports
- Identify growth areas and declining trends
- Provide insights into consumer behavior
- Support strategic business planning

Example:

"Analyze current trends in the e-commerce industry"

2. Competitive and Strategic Insights

DeepSeek assists in:

- Studying competitor strategies
- Identifying market opportunities
- Understanding risks and challenges
- Supporting decision-making processes

This is useful for:

- Business case studies
- Management projects
- Startup planning

DeepSeek for Data Analysis and Pattern Recognition

DeepSeek uses AI techniques to identify patterns from data.

1. Trend Detection and Forecasting

DeepSeek can:

- Detect patterns from historical data
- Identify correlations and anomalies
- Support predictive analysis

Benefits:

- Better understanding of market and academic trends
- Improved planning and forecasting

Academic and Professional Use Cases

- Research papers and dissertations
- Seminar topics and presentations
- Business analysis reports
- Market research and surveys
- Strategic planning documents

❖ Advantages of DeepSeek AI

- Efficient trend-based search
- Strong analytical capabilities
- Useful for both academic and business domains
- Saves time and manual effort
- Supports data-driven decisions

❖ Limitations of DeepSeek AI

- Depends on available data quality
- May require interpretation by users
- Not a replacement for expert analysis
- Ethical concerns if misused

❖ Ethical and Responsible Use of DeepSeek

To ensure responsible usage:

- Verify critical academic and business information
- Avoid blind reliance on AI-generated insights
- Use DeepSeek as a decision-support tool
- Follow academic integrity and ethical guidelines

❖ Future Scope of DeepSeek AI

DeepSeek is expected to:

- Enhance AI-driven research analysis
- Improve business intelligence systems
- Support smarter academic trend analysis
- Play a role in data-driven organizations

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Comparison of AI Tools for Academic & Productivity Tasks

Basis of Comparison	ChatGPT (OpenAI)	Microsoft Copilot	Gemini (Google AI)	DeepSeek AI
Developer	OpenAI	Microsoft	Google	DeepSeek
Primary Purpose	Content creation, explanations, brainstorming	Productivity enhancement in Microsoft 365	Research assistance and quick explanations	Searching and analyzing academic & business trends
Main Strength	Human-like writing and interaction	Integration with Word, Excel, PowerPoint	Strong research and explanation capability	Trend analysis and pattern detection
Academic Writing	Excellent for essays, notes, summaries	Good for structured documents in Word	Good for research-based writing	Limited (more analysis-focused)
Summarization	Very strong	Strong (documents & emails)	Strong (research content)	Moderate
Brainstorming	Excellent	Good	Good	Moderate
Data Analysis	Basic	Very strong (Excel)	Moderate	Very strong
Presentation Support	Content ideas	Full slide creation in PowerPoint	Content suggestions	Trend-based insights
Integration	Web-based & app-based	Microsoft 365 (Word, Excel, PPT)	Google Workspace & Search	Research and analytics platforms
Ease of Use	Very easy	Easy for MS users	Very easy	Moderate
Target Users	Students, teachers, professionals	Office users, businesses, students	Students, researchers	Researchers, analysts, managers
Ethical Risk if Misused	Plagiarism	Over-automation	Over-reliance	Misinterpretation of trends

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Use-Case Based Comparison

Best Tool for Essay Writing

- **Best:** ChatGPT
- **Reason:** Generates structured, well-written academic content

Best Tool for Office Productivity

- **Best:** Microsoft Copilot
- **Reason:** Works directly inside Word, Excel, and PowerPoint

Best Tool for Research & Quick Learning

- **Best:** Gemini (Google AI)
- **Reason:** Strong explanations and research assistance

Best Tool for Trend Analysis

- **Best:** DeepSeek AI
- **Reason:** Designed for academic and business trend analysis

Advantages Comparison

- **ChatGPT:** Best for writing, summarizing, and idea generation
- **Microsoft Copilot:** Best for productivity and automation in Microsoft tools
- **Gemini:** Best for research support and quick explanations
- **DeepSeek:** Best for data-driven academic and business insights

Conclusion:

- ChatGPT focuses on **language and creativity**
- Copilot focuses on **productivity and automation**
- Gemini focuses on **research and understanding**
- DeepSeek focuses on **analysis and trends**

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Module 3: Hands-On AI Applications for Student Life & Academics

Artificial Intelligence tools and technologies to support students in their academic activities and everyday life.

This module emphasizes experiential learning, where students actively apply AI-powered applications to enhance studying, research, time management, collaboration, and personal productivity

What is Hands-On AI Applications ?

Hands-On AI Applications refer to the practical and real-world use of Artificial Intelligence tools, systems, and techniques, where users actively interact with AI rather than only learning theoretical concepts.

It involves applying AI technologies—such as machine learning models, chatbots, recommendation systems, speech recognition, image processing, and data analytics—to solve everyday problems, complete tasks, and improve efficiency.



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What is the difference between AI and Hands-On AI Applications

AI is the theoretical and conceptual foundation of intelligent systems. It focuses on *how* and *why* machines can perform tasks that normally require human intelligence.

It includes everything from smart assistants like Alexa, chatbots, and image generators to robotic vacuum cleaners and self-driving cars.

Hands-On AI Applications :-

Hands-On AI Applications focus on practical implementation—using existing AI techniques to build real-world solutions.

To apply AI tools to solve real problems to build, test, and deploy AI systems to gain job-ready technical skills

Data collection and cleaning Model training and evaluation Deployment of AI models Integration of AI into apps and systems

❖ Assignment & Report Writing: Using AI to generate ideas, outlines, and improve writing :

Assignment and Report Writing refers to the use of AI tools to assist, augment, or automate the various stages of creating academic, professional, or technical documents.

In education, generative AI tools are increasingly used to support students in assignment and report writing by helping with idea generation, outlining, drafting, and improving language quality. When used responsibly, AI can enhance learning, creativity, and productivity.

1. Idea Generation and Topic Understanding

AI assists students during the early stage of writing by helping them understand the topic and generate relevant ideas.

How AI Helps:

- Analyzes the given topic
- Suggests key points and subtopics

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- Helps students overcome writer's block

Educational Value:

Students gain clarity about what to write and how to approach the topic logically.

2. Creating Outlines and Structure

A well-structured assignment or report improves readability and understanding. AI helps organize ideas into a proper format.

How AI Helps:

- Creates logical outlines
- Divides content into sections such as introduction, body, and conclusion
- Suggests headings and subheadings

Educational Value:

Students learn how to organize information clearly and systematically.

3. Improving Language and Writing Quality

AI tools help students enhance the clarity and correctness of their writing.

How AI Helps:

- Corrects grammar, spelling, and punctuation
- Improves sentence structure
- Suggests better vocabulary

Educational Value:

Students improve their language skills and produce professional-quality work.

4. Editing and Rewriting Content

AI supports revision by improving clarity and readability without changing the original meaning.

How AI Helps:

- Rephrases sentences
- Simplifies complex language

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- Adjusts tone (formal or simple)

Educational Value:

Students learn how to express ideas more effectively and clearly.

5. Research Assistance and Summarization

AI helps students handle large amounts of information efficiently.

How AI Helps:

- Summarizes long articles or research papers
- Highlights key points
- Organizes research notes

Educational Value:

Students save time and focus on understanding rather than copying information.

6. Maintaining Academic Integrity

Ethical use of AI is essential in academic writing.

Proper Use of AI:

- Use AI for guidance and support
- Write assignments in your own words
- Review and understand all AI-suggested content

Improper Use of AI:

- Copying AI-generated text directly
- Submitting AI content as original work
- Using AI to cheat in exams

7. Advantages of Using AI in Assignment Writing

- Saves time
- Improves writing quality
- Enhances understanding
- Builds student confidence
- Supports independent learning

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8. Limitations of AI in Academic Writing

- AI may provide incorrect or outdated information
- It cannot replace critical thinking
- Overdependence can reduce learning skills

Presentation Creation: AI tools for designing slides and structuring content

:-

What Is Presentation Creation Using AI Tools?

Presentation creation using AI tools refers to the use of artificial intelligence software to help design, organize, and improve presentations. These tools assist users in creating clear, attractive, and well-structured slides with less time and effort, especially useful for students, teachers, and professionals.

❖ Presentation Creation: AI Tools for Designing Slides and Structuring Content

Artificial Intelligence (AI) has transformed the way presentations are created. AI tools help students design visually appealing slides and organize content effectively.

1. Role of AI in Presentation Creation

AI supports students throughout the presentation-making process, from planning content to final design.

Key Functions of AI:

- Understanding the presentation topic
- Structuring content logically
- Designing professional-looking slides
- Improving text clarity and visuals

2. AI for Structuring Presentation Content

A strong presentation requires a clear and logical flow. AI helps organize ideas into an effective structure.

How AI Helps:

- Creates an outline (introduction, main points, conclusion)

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- Suggests headings and bullet points
- Ensures smooth flow between slides

Academic Benefit:

Students learn how to present information in a clear, concise, and organized manner.

3. AI for Slide Design and Layout

AI tools assist in designing visually appealing slides without requiring advanced design skills.

How AI Helps:

- Suggests suitable layouts and templates
- Chooses readable fonts and color combinations
- Aligns text, images, and charts automatically

Academic Benefit:

Presentations look professional and are easier for the audience to understand.

4. AI for Visual Content Creation

Visual elements improve engagement and understanding.

How AI Helps:

- Recommends relevant images and icons
- Generates charts and graphs from data

Academic Benefit:

Visual aids make complex information easier to explain and remember.

5. AI for Text Improvement in Slides

AI helps refine slide text for clarity and impact.

How AI Helps:

- Shortens long sentences
- Converts paragraphs into bullet points
- Improves grammar and wording

Academic Benefit:

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Slides become clear, concise, and audience-friendly.

6. Time Management and Productivity

AI speeds up the presentation creation process.

How AI Helps:

- Generates slide drafts quickly
- Reduces manual formatting work
- Allows students to focus on understanding and delivery

Academic Benefit:

Students save time and reduce stress, especially during exams or project deadlines.

7. Ethical Use of AI in Presentations

AI should be used as a support tool, not a replacement for student effort.

Proper Use:

- Use AI for planning, designing, and editing
- Review and understand all AI-generated content
- Customize slides in your own words

Improper Use:

- Presenting AI-generated content without understanding
- Copying content blindly
- Misrepresenting AI work as personal research

8. Advantages of AI in Presentation Creation

- Improves content organization
- Enhances visual quality
- Saves time
- Boosts confidence during presentations

9. Limitations of AI Tools

- May oversimplify complex topics
- Cannot replace subject knowledge

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- Requires human judgment for accuracy

❖ Note-Taking & Study Help: AI for summarizing lectures and creating study guides :

Artificial Intelligence (AI) plays an important role in helping students take better notes and study more effectively.

1. AI for Summarizing Lectures

AI can convert long lectures—either spoken or written—into short, clear summaries.

- Converts speech to text (for recorded or live lectures)
- Identifies key points and important terms
- Removes repeated or less important information

Student Use

- Reviewing online or classroom lectures
- Catching up on missed classes
- Quick revision before exams

Educational Benefit

Students focus on understanding concepts instead of writing everything manually.

2. AI-Assisted Note-Taking

AI helps organize notes automatically in a clear and readable format.

How AI Works

- Detects headings and subtopics
- Converts long text into bullet points
- Highlights keywords and definitions

Student Use

- Creating clean and structured notes
- Revising topics faster
- Keeping digital notebooks organized

Educational Benefit

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Improves note quality and helps students revise efficiently.

3. AI for Creating Study Guide

AI generates concise study guides from textbooks, notes, or lecture content.

How AI Works

- Summarizes chapters or topics
- Extracts key concepts, formulas, and definitions
- Organizes content into sections

Student Use

- Exam preparation
- Quick topic review
- Last-minute revision

Educational Benefit

Helps students focus on important exam-relevant material.

4. AI for Question Generation and Practice

AI creates practice questions based on study material.

How AI Works

- Analyzes topic content
- Generates short-answer or multiple-choice questions
- Suggests answers for self-checking

Student Use

- Self-testing after studying
- Understanding exam patterns
- Improving memory and confidence

Educational Benefit

Encourages active learning and better retention.

5. Time Management and Productivity Support

AI helps students plan and manage study time effectively.

How AI Works

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- Breaks topics into study sessions
- Suggests revision schedules
- Tracks progress

Student Use

- Planning daily study routines
- Avoiding last-minute stress
- Balancing multiple subjects

Educational Benefit

Improves discipline and reduces academic pressure.

6. Ethical and Responsible Use of AI

- Use AI for summarizing and organizing
- Review and understand AI-generated notes
- Add personal explanations and examples

Improper Use

- Relying only on AI without learning
- Using AI summaries as a replacement for classes

7. Advantages of AI in Note-Taking & Study Help

- Saves time
- Improves understanding
- Reduces study stress
- Supports independent learning

8. Limitations of AI Tools

- May miss important details
- Cannot replace teacher explanations

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❖ Email & Communication: AI for writing professional emails and messages :

AI can help with writing professional emails and messages.

What AI is good at for emails

1. Turning rough thoughts into clear writing

You can give AI bullet points or a messy draft, and it can turn them into a clean, professional email.

2. Adjusting tone

- Formal (teacher, principal, internship, company)
- Neutral (group project, club)
- Friendly-professional (coach, mentor)

3. Saving time

AI is great for:

- Thank-you emails
- Follow-ups
- Requests (extensions, meetings, info)
- Apologies or clarifications

4. Fixing grammar & clarity

It catches:

- Run-on sentences
- Tone that sounds too casual or too harsh

How to ask AI for a good email ?

Bad prompt:

“Write an email.”

Good prompt:

“Write a polite, professional email to my teacher asking for a one-day extension on a homework assignment. Keep it respectful and not too long.”

Even better:

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“Write a polite, professional email to my teacher asking for a one-day extension on a homework assignment. Reason: I was sick. Tone: respectful and responsible. Length: short.”

Common professional email structure?

AI usually follows this (and you should check that it does):

Subject line – clear and specific

Greeting – “Dear Ms. Lopez,” / “Hello Dr. Kim,”

Purpose – why you’re writing (quickly)

Details – brief explanation or request

Closing – polite and appreciative

Sign-off – “Sincerely,” / “Best regards,” + your name

Where *you* should be careful ?

Don’t copy blindly – read it and make sure it sounds like *you*

Avoid over-formal language (AI sometimes sounds like a robot lawyer)

Check facts & names – AI doesn’t know your real situation unless you tell it

Be honest – don’t ask AI to make excuses that aren’t true

Example uses (no copying needed) ?

Asking a teacher for help

Emailing a club advisor

Writing a thank-you after an interview or recommendation

Sending a professional message on Google Classroom, Teams, or email

Example:

Dear Sir/Madam,

I hope this email finds you well.

I am writing to respectfully request an extension for submitting my assignment for the subject *[Subject Name]*. Due to unforeseen circumstances, I have been unable to complete the assignment by the original deadline.

I kindly request an extension of two days to ensure that I submit quality work. I assure you that I am making every effort to complete the assignment as soon as possible.

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Thank you very much for your time and understanding. I would be grateful for your consideration.

Yours sincerely,

[Your Name]

[Class / Roll Number]

❖ **Event & Project Planning: AI for organizing group projects, schedules, and to-do lists :-**

AI helps:

Break a big project into smaller tasks

Assign tasks to group members

Set deadlines for each step

Creating schedules & timelines

AI can:

Make study plans or project timelines

Suggest realistic deadlines

Adjust schedules when plans change

3. Managing to-do lists

AI helps you:

Create daily or weekly to-do lists

Prioritize important tasks

Track what's done and what's pending

3. Improving teamwork

4. AI can:

Summarize group discussions

Turn meeting notes into action items

Reduce confusion about “who does what”

5. Planning events

For school events, clubs, or activities, AI helps with:

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Task checklists (venue, materials, roles)

Event timelines

Reminder planning

Why AI is helpful

Saves time

Keeps projects organized

Reduces stress

Helps everyone stay on track

Simple example

You say:“We have a science project due in 2 weeks with 4 people.”

AI helps:

Create a task list

Assign roles

Set a clear schedule

AI in event & project planning is used to:

Plan tasks

Manage time

Coordinate group work

Finish projects on time

**Example For AI-made schedule & to-do list for a group school project.
(Simple, realistic, and easy to follow.)**

Example: Science Project (2 Weeks, 4 Students)

Project Goal

Create a presentation and model on Renewable Energy

2-Week Schedule

Week 1

Day 1 – Planning

Decide topic & roles

Create task list

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Set deadlines

Day 2–3 – Research

Student A: Solar energy

Student B: Wind energy

Student C: Advantages & disadvantages

Student D: Real-world examples

Day 4 – Group Check-in

Share research

Fix missing info

Day 5–6 – Content Creation

Slides outline

Write main points

Collect images/diagrams

Week 2

Day 8 – Model / Visual Work

Build model or poster

Design slides

Day 9 – First Draft Review

Check accuracy

Improve clarity

Day 10 – Practice Presentation

Time the presentation

Fix weak parts

Day 11 – Final Edits

Correct mistakes

Finalize visuals

Day 12 – Submission

Submit project

Backup files

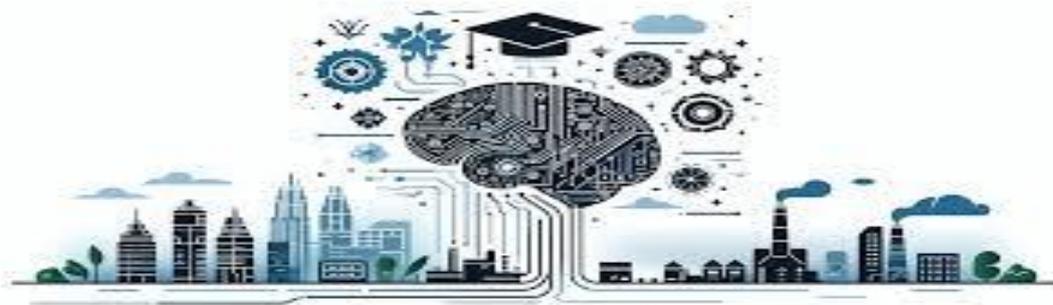
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Module 4: AI for Career Growth & Future-Ready Skills

- ❖ Resume & Cover Letter Writing: Using AI to create professional resumes
- ❖ Interview Preparation: AI-generated mock interview questions and feedback
- ❖ Networking & Personal Branding: AI for writing LinkedIn posts and improving online presence
- ❖ Time Management & Productivity: AI tools for scheduling and tracking progress
- ❖ Final Hands-On Activity: Use AI to complete a real-life academic or career-related task

What is AI for Career Growth & Future-Ready Skills?

- AI for Career Growth & Future-Ready Skills refers to the use of Artificial Intelligence tools and technologies to help individuals plan, develop, and advance their careers by learning the skills needed for future jobs.



- AI acts as a **career assistant**, helping people identify skill gaps, learn in-demand skills, and stay competitive in a rapidly changing job market.
- Skill Identification & Gap Analysis
- Personalized Learning & Upskilling
- Career Guidance & Planning
- Job Search & Career Advancement

Tool	Best For	Key Feature
Teal	Strategy & Tracking	Built-in job tracker and "Match Score" for job ads.
Kickresume	Fast Generation	High-quality templates and GPT-powered content.
Jobscan	ATS Optimization	Compares your resume to a job ad to find missing keywords.
Canva	Creative Roles	Best for visual impact (not ideal for

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Tool	Best For	Key Feature
		strict corporate ATS).
Rezi	Bullet Points	Excellent for generating "quantified" achievement bullets.

Resume & Cover Letter Writing: Using AI to Create Professional Resumes:

How AI Helps in Resume Writing

- Analyzes job descriptions to identify important keywords
- Optimizes resumes for Applicant Tracking Systems (ATS)
- Suggests role-specific skills and achievements
- Improves grammar, formatting, and readability
- Converts job responsibilities into impact-based statements

Examples:

1. ChatGPT : Custom writing & personalization
2. Rezi : ATS-friendly resumes
3. Resume Worded: Feedback & refinement
4. Zety : Guided, professional layout designs



5. Kickresume : Easy, stylish resumes

How AI Helps in Cover Letter Writing

- Generates personalized cover letters for specific job roles
- Maintains a professional and confident tone
- Highlights relevant skills, experience, and achievements
- Structures content logically (introduction, body, conclusion)

Benefits of Using AI

- Saves time and effort
- Produces error-free and well-structured documents
- Increases chances of shortlisting by matching employer expectations
- Suitable for freshers, professionals, and career switchers

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+ Interview Preparation: AI-Generated Mock Interview Questions and Feedback

- Artificial Intelligence (AI) helps candidates prepare for interviews by creating **realistic mock interviews** and providing **instant, personalized feedback**. This improves confidence, communication skills, and answer quality.

How AI Supports Interview Preparation

- Generates **job-specific interview questions**
- Simulates **HR, technical, and behavioral interviews**
- Analyzes answers for **clarity, structure, and relevance**
- Provides feedback on **confidence, tone, and communication**
- Identifies **strengths and improvement areas**

Types of AI-Generated Interview Questions

1. **HR Questions**
 - Tell me about yourself
 - What are your strengths and weaknesses?
2. **Technical Questions**
 - Role-based and skill-specific questions
 - Problem-solving and scenario questions
3. **Behavioral Questions**
 - Describe a challenging situation and how you handled it
 - Give an example of teamwork or leadership
4. **Situational / Case-Based Questions**
 - What would you do if a project deadline is missed?

AI-Based Feedback Provided

- Content relevance and completeness
- Communication clarity and confidence level
- Use of examples and structure (STAR method)
- Suggestions for improving answers

Benefits of Using AI for Interview Practice

- Realistic interview experience
- Immediate feedback and scoring
- Reduces interview anxiety
- Suitable for **freshers and experienced professionals**

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✚ Networking & Personal Branding: AI for Writing LinkedIn Posts and Improving Online Presence

- Artificial Intelligence (AI) helps professionals build a strong personal brand and expand their professional network by creating engaging content and optimizing online profiles, especially on platforms like LinkedIn.

How AI Helps in Networking & Personal Branding

- Writes professional LinkedIn posts (achievements, insights, announcements)
- Improves profile headlines and summaries
- Suggests industry-relevant keywords
- Enhances tone, clarity, and engagement
- Helps maintain consistent posting

AI for LinkedIn Content Creation

- Career updates (new role, certification, achievements)
- Thought leadership posts
- Industry insights and trends
- Event and presentation highlights
- Professional storytelling

Example:

AI Tools for LinkedIn & Personal Branding

1. ChatGPT: Post writing, profile optimization, networking messages
2. LinkedIn AI (Built-in): Native LinkedIn content enhancement
3. Hootsuite with AI : Consistent posting and brand visibility
4. Canva AI: Visual personal branding
5. Jasper AI: Advanced content writing
6. Grammarly: Polished posts and messages
7. Taplio: Personal branding and networking growth

✚ Time Management & Productivity: AI Tools for Scheduling and Tracking Progress

- Artificial Intelligence (AI) helps individuals manage time effectively by **automating schedules, prioritizing tasks, and monitoring progress** in real time. This leads to better focus, efficiency, and goal achievement.

AI for Scheduling Tasks

AI analyzes deadlines, priorities, and work patterns to create smart schedules.

How it helps:

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- Automatically plans daily and weekly schedules
- Prioritizes tasks based on urgency and importance
- Adjusts schedules when tasks are delayed
- Sends reminders and notifications

Example:

AI reschedules tasks if a meeting runs longer than planned.

2. AI for Tracking Progress

AI continuously monitors task completion and performance.

How it helps:

- Tracks completed, pending, and overdue tasks
- Provides visual progress reports and dashboards
- Identifies productivity trends and delays
- Suggests improvements for better performance

Example:

AI shows weekly productivity reports and highlights time-consuming tasks.

3. AI-Based Productivity Insights

AI learns from user behavior and provides personalized suggestions.

How it helps:

- Identifies time-wasting activities
- Recommends optimal work hours
- Suggests breaks to avoid burnout
- Tracks **task completion and performance**
- Analyzes work patterns to suggest improvements
- Identifies **time-wasting activities**
- Generates **progress reports and insights**

4. Benefits of AI in Time Management

- Saves time and reduces manual planning
- Improves focus and efficiency
- Prevents missed deadlines
- Enhances goal tracking
- Creates **smart schedules** based on priorities and deadlines
- Automatically allocates time for tasks
- Sends **reminders and alerts**
- Adjusts schedules when tasks are delayed

AI Tools for Productivity & Progress Tracking

- Tracks **task completion and performance**

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- Analyzes work patterns to suggest improvements
- Identifies **time-wasting activities**
- Generates **progress reports and insights**

Examples of AI Productivity Tools

- **Google Calendar (AI scheduling features)**
- **Notion AI** – task planning & summaries
- **Microsoft Copilot** – workflow assistance
- **Motion** – automatic daily planning
- **Todoist (AI suggestions)**

Benefits of Using AI for Productivity

- Saves time and reduces manual planning
- Improves focus and efficiency
- Enhances goal tracking
- Reduces stress and missed deadlines

Final Hands-On Activity: Use AI to complete a real-life academic or career-related task

Artificial Intelligence (AI) supports learners and professionals by providing **practical, step-by-step assistance** to complete real-life academic or career-related tasks efficiently. A hands-on activity allows users to **apply AI tools directly** to solve real problems.

1. AI in Academic Hands-On Activities

How AI Helps

- **Generates** notes, summaries, and explanations
- **Helps create** assignments, reports, and presentations
- **Generates** MCQs, quizzes, and practice questions
- **Improves grammar, structure, and clarity**

Example Hands-On Activity:

Use AI to summarize a chapter and create short notes and MCQs for exam preparation.

2. AI in Career-Related Hands-On Activities

How AI Helps

- **Creates** professional resumes and cover letters
- **Generates** mock interview questions with feedback
- **Helps write** LinkedIn posts and networking messages
- **Suggests** career paths and skill improvements

Example Hands-On Activity:

Use AI to create a job-specific resume and practice interview questions.

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3. Steps in a Hands-On AI Activity

1. Select a real-life academic or career task
2. Choose an appropriate AI tool (ChatGPT, Notion AI, Copilot, etc.)
3. Provide clear instructions (prompts) to the AI
4. Review, edit, and personalize the AI output
5. Apply or submit the final result

4. Benefits of Hands-On AI Activities

- Practical understanding of AI usage
- Saves time and improves accuracy
- Builds confidence in real-world applications
- Enhances productivity and skill development