AI & YOU
STUDENT GUIDE TO GENERATIVE TOOLS

Center for Teaching Excellence
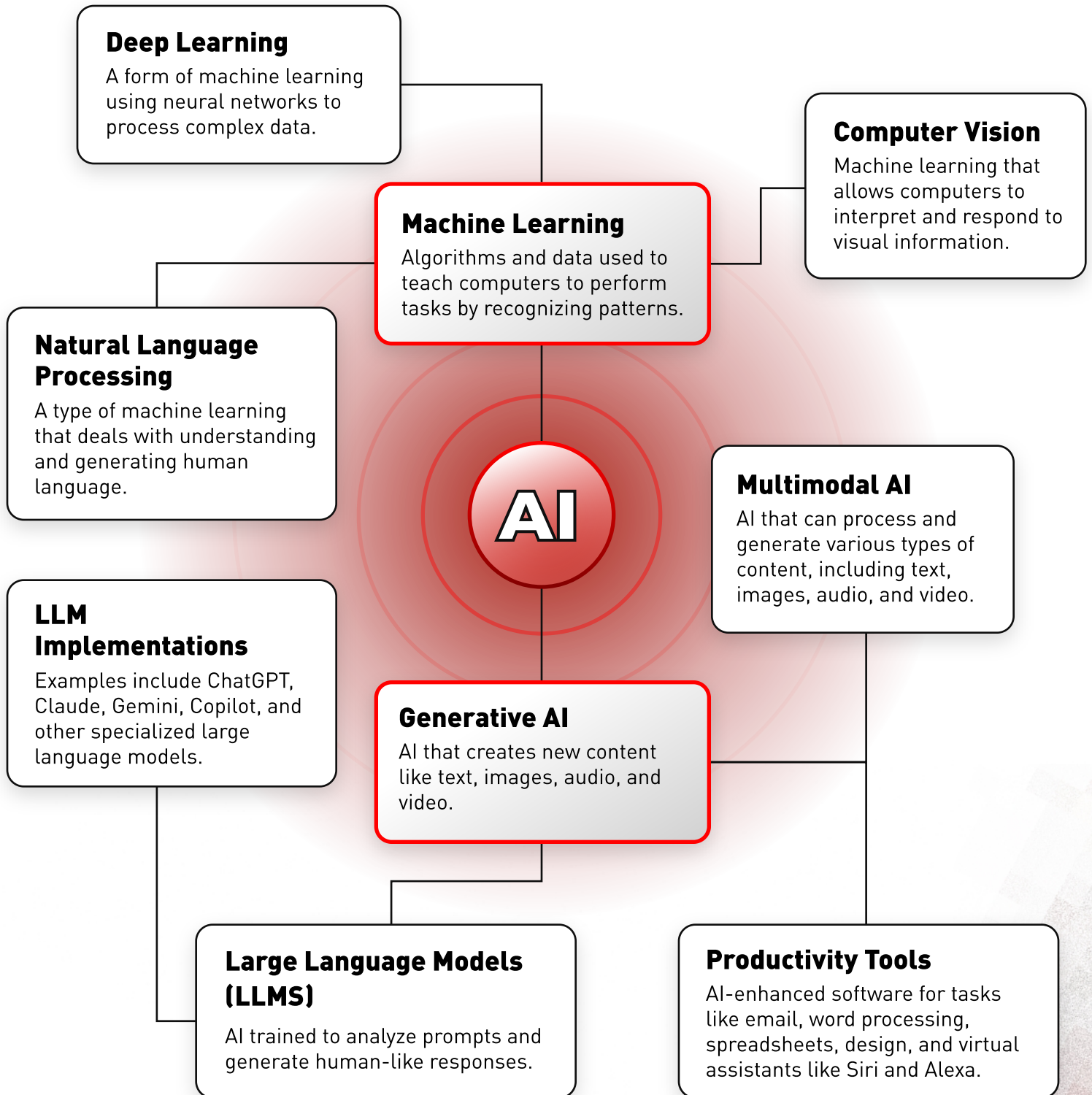
- Copilot
- Gemini
- ChatGPT
- Adobe Firefly
- Claude

THE UNIVERSITY OF UTAH

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Terminology

AI tools are now integrated into many aspects of daily life, often in ways that people may not even notice. In this environment, it's essential to have a basic understanding of how AI tools work and to familiarize yourself with key AI terms and acronyms.

Deep Learning

A form of machine learning using neural networks to process complex data.

Machine Learning

Algorithms and data used to teach computers to perform tasks by recognizing patterns.

Computer Vision

Machine learning that allows computers to interpret and respond to visual information.

Natural Language Processing

A type of machine learning that deals with understanding and generating human language.

AI

Multimodal AI

AI that can process and generate various types of content, including text, images, audio, and video.

LLM Implementations

Examples include ChatGPT, Claude, Gemini, Copilot, and other specialized large language models.

Generative AI

AI that creates new content like text, images, audio, and video.

Large Language Models (LLMS)

AI trained to analyze prompts and generate human-like responses.

Productivity Tools

AI-enhanced software for tasks like email, word processing, spreadsheets, design, and virtual assistants like Siri and Alexa.

Harnessing AI: Boosting Academic Success

01 Orientation and Early Semesters

Getting Acquainted with AI Tools

• Exploration: Introduce yourself to AI tools for writing, creativity, and study support.

02 Coursework and Assignments

Writing & Creative Assistance

• Brainstorming: Use AI to generate and refine ideas for essays and papers.

• Organizing: Leverage AI to create outlines and organize content.

• Style & Clarity: Utilize AI to adjust tone, enhance clarity, and check grammar.

• Citation: AI can assist with citation formats and detecting plagiarism.

• Collaboration: Simulating peer reviewers, summarizing group notes.

• Design & Production: Apply AI in graphic design and video editing to streamline tasks.

03 Midterms and Exams

Research and Information Gathering

• Note Summaries: Use AI to condense lectures into study guides.

• Quiz Creation: Generate practice quizzes for exam prep.

• Topic Overview: Quickly explore and summarize new topics.

• Source Evaluation: Always verify AI-generated summaries and information with primary sources to ensure accuracy and depth of understanding.

• Data Visualization: Analyze data and create visuals with AI.

• Task Planning: Manage tasks and deadlines efficiently using AI.

• Feedback Generation: Use AI to simulate peer feedback.

04 Graduation and Beyond the Classroom

Career Preparation and Mapping

• Resume Optimization: Tailor resumes and cover letters with AI.

• Interview Prep: Use AI to simulate interviews and refine answers.

• Career mapping (e.g., using AI to explore job paths).

Classroom AI "how-to" Manual

Guidelines for Your Classes:

1. Understanding the Syllabus and AI Policies:

Every course you take will have a syllabus that outlines the learning objectives and the professor's expectations. Often, this will include guidelines on the use of AI. Make sure you read the syllabus thoroughly. If AI isn't mentioned, it's a good idea to ask your professor for clarification right away.

2. Variability in AI Policies:

Be aware that AI-related policies can differ significantly from one professor or course to another, and even across different assignments or projects. Some instructors may encourage or require the use of AI tools, while others might strictly prohibit them. These choices are usually tied to the specific learning objectives of the course. It's important to keep track of these policies to avoid any confusion.

3. Maintaining High Ethical Standards with AI:

- **Originality:** Always ensure that the work you submit reflects your own voice and ideas. While AI tools can be used to assist you, they should not be used to complete the work for you unless your professor explicitly allows it for a specific purpose.

- **Acknowledgment and Attribution:** Adhere to your professor's and institution's rules regarding the acknowledgment or citation of AI use. If you're unsure about how to cite AI-generated content, don't hesitate to ask. Both APA and MLA offer guidelines on how to properly cite the use of generative AI.

- **Data Security and Privacy:** Remember that any data you provide to an AI tool is no longer private and could be used in ways you cannot control. It's crucial to protect your data—never share sensitive, personal, or confidential information about yourself, others, or your organization with AI systems.

Student AI Checklist

STEP 1
Before you begin:

- I have confirmed that my professor allows the use of the AI tools I'm considering for this assignment.

- I fully understand when, where, and how I am permitted to use AI for this assignment.

PERMISSION

STEP 2
While Doing the Work:

- I am using my own ideas, words, and tone throughout the assignment.

- I have verified sources provided by AI and correctly cited any facts, statistics, or quotes used.

- I have critically evaluated the AI-generated content and identified any inaccurate, biased, or misleading information.

- I have documented the ways in which I used AI and cited its use in line with my professor's expectations.

- I have avoided using any confidential, protected, or copyrighted information in my work.

ORIGINAL IDEAS

VERIFIED SOURCES

DOCUMENTED

STEP 3
After Completing the Assignment:

- I am able to explain my findings and demonstrate a full understanding of the topic without relying on AI.

- I can provide evidence of the sources I used and explain how I verified the accuracy of the information.

VERIFIED EVIDENCE

Master "Prompts"

When you interact with major generative AI tools, you'll develop the ability to engage in conversations that resemble human interactions. It's important to critically evaluate the results of these exchanges, as thoughtful back-and-forth dialogue often yields the best outcomes.

5 Tips for Crafting Effective Prompts:

1. Be Clear and Specific: Vague prompts lead to broad answers. Focus on what you want to learn.
2. Use Step-by-Step Prompts: Break complex tasks into smaller parts.
3. Contextualize: Provide background to ensure relevant responses.
4. Request Alternatives: Ask for different perspectives or approaches to deepen understanding.
5. Iterate: Refine prompts based on AI's output for better responses.

Meta Prompting:

This technique can include asking the AI to analyze or self-critique its output, suggest alternative responses, or explain its reasoning. Meta-prompting is a powerful tool for optimizing interaction with AI systems, enabling deeper exploration of complex ideas and improving the quality of generated responses.

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[Examples]

> "What parts of my argument could be improved, and how can I strengthen them for clarity and depth?"

> "Can you explain this concept in different contexts (e.g., academic, practical, or real-world applications)

Prompt Formula:

(As an expert in nutrition) + (explain the benefits of a plant-based diet) + (in simple terms, under 100 words) + (focusing on long-term health impacts)

(Role/Context) + (Task/Action) + (Constraints/Guidance) + (Outcome/Focus)

Concerns in Generative AI

Truth & Accuracy

Bias in Training Data

AI systems can perpetuate biases present in the data they are trained on, leading to inaccurate or skewed outputs.

Misinformation or Hallucinations:

AI can generate false or misleading information, especially when it fills gaps in knowledge with fabricated responses, sometimes known as "hallucinations."

Lack of Source Verification

AI models often aggregate information without validating sources, which can lead to unreliable or unverifiable responses.

Ethics & Rights

Privacy and Surveillance

AI technologies can infringe on individual privacy by collecting, storing, and analyzing personal data without consent or adequate transparency.

Autonomy and Decision-Making

AI systems may make decisions that affect individuals' lives (e.g., hiring, law enforcement, credit scoring) without human oversight, potentially infringing on rights or leading to unjust outcomes.

Accountability

It is often unclear who is accountable for AI system errors or biases, raising concerns about responsibility for harmful or unethical outcomes.

Technical Issues

Data Quality and Availability

AI systems rely on vast amounts of high-quality data. Poor, incomplete, or biased data can negatively impact the performance and accuracy of AI models.

Model Robustness and Generalization:

AI models often struggle to generalize across different environments. A model trained in one context may perform poorly when applied to a new situation, leading to unreliable results.

Interpretability and Transparency

Many AI models, especially deep learning systems, are seen as "black boxes," making it difficult to understand how they arrive at decisions, leading to challenges in trust and accountability.

Guiding Principles

Human-Centered AI in Professional Work: AI should be designed to support and enhance the capabilities of professionals, rather than operate independently. It's important to approach AI as a tool that assists rather than replaces human expertise.

Accountability with AI Assistance: Even when using AI tools, students remain fully responsible for their decisions and actions. It's essential that any content generated by AI is thoroughly reviewed, edited, and approved by the student, ensuring the final work reflects their own voice and understanding.

The Human Element in Creativity: Human knowledge, experience, and imagination are crucial for creativity. Explore and support new career opportunities for creative professionals influenced by AI.

Ethical Use of AI in Communication: It's imperative to use AI responsibly, and never to mislead or spread false information. Understanding the influence of communication is key to making positive changes, and this requires a commitment to ethical practices in AI use.

Ensuring Accuracy in AI-Generated Information: While AI can assist in gathering information, nothing can substitute for the critical role of human fact-checkers. It's important to verify the accuracy of AI-supplied information, as the ultimate responsibility lies with the human communicator.

Avoiding Plagiarism in AI-Generated Content: AI-generated materials may inadvertently include copyrighted content. Therefore, students must diligently review and, if necessary, modify any AI-generated content to ensure the final product is original and free from plagiarism.

Transparency in AI Usage: Be open about AI use to maintain audience trust. Transparency ensures credibility and ethical communication

Examples of Responsible Use of AI

Navigating the AI-Generated Marketplace: The AI content market evolves rapidly, so it's impractical to list all use cases. The provided examples and guidelines offer direction and may be updated as needed.

Getting Comfortable with AI Tools: Explore and practice with generative AI tools to see how they can boost your productivity.

- **Generating New Story Ideas:** AI can be a useful partner in brainstorming, offering fresh perspectives or constructive feedback to help refine your content ideas.

- **Structuring Your Content:** AI can assist in organizing your thoughts and ideas into a coherent outline, making the writing process more efficient.

- **Starting Your Research:** AI can quickly overview concepts, from sports rules to complex theories, but you must verify all facts and information, as AI can produce inaccuracies or fabrications.

- **Preparing for Questions or Challenges:** Use AI to simulate an investigative journalist's approach, helping you anticipate potential questions or objections from stakeholders, so you can be better prepared with responses.

- **Supporting Your Editing Process:** AI can offer guidance on editorial styles, such as Chicago or AP, but be aware that some tools may not have access to the latest style guide updates or specific guidelines, like those of the University of Utah.

- **Enhancing Your Vocabulary:** AI can serve as a thesaurus, helping you find alternative words or phrases or even rework sections of your content for clarity or impact.

FAQS

How can AI help me in my studies?

With AI, personalized learning is definitely aided. The resources provided include practice quizzes, tutoring, and even feedback on assignments. It can explain concepts in lessons, suggest study plans, and even help with writing.

Will AI replace my teachers?

No, AI is designed to complement teaching by supporting students and instructors; it enhances learning but does not replace guidance or expertise from the teachers themselves.

Is the use of AI tools cheating?

That depends on how it is being used. In learning support, most usage has been acceptable. However, doing an assignment by AI without proper referencing may amount to plagiarism or cheating.

Will AI make personalized learning experiences available?

AI will customize learning resources for you, test your strengths and weaknesses, and recommend relevant content to clarify the material.

FAQS

What can and cannot be done in the classroom with AI?

AI may only sometimes capture the nuance of every subject matter or comment to the level that a teacher can. Creative or open-ended problems are also a challenge.

Can AI improve my writing?

Yes, tools in AI can give suggestions on grammar, structure, and style; some even help to refine writing. But the final product must be your ideas, expressed with your voice.

Is AI biased?

Any AI system is only as good as its training data, which may contain biases, resulting in biased output. It's essential to use it critically, in conjunction with other learning

How can I use AI responsibly in my coursework?

Please consider AI as an enhancement to your studies and give full credit where the contribution has been made. Let your final work be academically honest and original.

UofU AI Resources

Copilot + Copilot Studio

Microsoft CoPilot (Everday AI Companion) (https://copilot.microsoft.com/)

Free with University plan

AI for generating essays, questions, research, and a broad set of applications.

To get started, sign in to Microsoft 365 with your **uNID@umail.utah.edu**

Adobe Firefly

Adobe Firefly (Generative AI) (https://www.adobe.com/products/firefly)

Free with University plan

Firefly models and services power generative AI features in Adobe creative apps.

To get started, download the Creative Cloud desktop application. This is where applications are launched and updated, and where you can manage and share any assets you've created and stored to the Cloud.

Gemini

Google Gemini (Supercharge your creativity and productivity) (https://gemini.google.com/)

Free (Limited)

Chat to start writing, planning, learning and more with Google AI

To get started, create a google account to chat with Gemini

Further AI Resources

1. Writing and Content Creation

GPT-4 (OpenAI ChatGPT Plus): [OpenAI](https://www.openai.com/chatgpt)
Free (Limited)
Advanced AI for generating essays, reports, and creative writing.

Grammarly [Grammarly](https://www.grammarly.com/)
Free/Paid
AI tool for grammar checking and writing improvement, useful for essays and assignments.

QuillBot [QuillBot](https://quillbot.com/)
Free/Paid
AI paraphrasing tool to help rewrite sentences, improve clarity, and avoid plagiarism.

Sudowrite (Creative Writing Assistant): [Sudowrite] (https://www.sudowrite.com/)
Paid
Helps with brainstorming and generating creative writing pieces.

Rytr [Rytr](https://rytr.me/)
Free/Paid
AI writing assistant for creating high-quality content quickly.

Claude [Claude](https://chat.chatbot.app/)
Free/Paid
Excels in ethical AI principles, transparency, and strong academic and image analysis capabilities.

Perplexity [Perplexity] (https://www.perplexity.ai/)
Free/Paid
Web search engine that uses a large language model to process queries and synthesize responses based on web search results.

Further AI Resources

2. Code Generation and Development

GitHub Copilot (AI Coding Assistant): [GitHub Copilot]
(https://github.com/features/copilot)
Paid
Suggests code snippets and assists with coding in various languages.

Tabnine (AI Code Completion): [Tabnine] (https://www.tabnine.com/)
Free (Limited) / Paid
Completes code, suggesting next lines based on context.

OpenAI Codex (AI Code Generator) (https://openai.com/blog/openai-codex/)
Paid
Converts natural language into code snippets.

CodeT5 [Hugging Face] (https://huggingface.co/Salesforce/codet5-base)
Free
Open-source AI model for code generation, understanding, and completion.

Further AI Resources

3. Art and Design

DALL·E (AI Image Generation): [DALL·E] (https://openai.com/dall-e-2/)
Free (Limited) / Paid
Generates images from textual descriptions, useful for visual projects.

Midjourney (AI Art Creation): [Midjourney] (https://www.midjourney.com/)
 Paid
Creates artistic visuals based on prompts.

Canva's Magic Design (AI Design): [Canva Magic Design] (https://www.canva.com/)
Free (Limited) / Paid
Helps design presentations, posters, and other visual content with AI.

Artbreeder [Artbreeder] (https://www.artbreeder.com/)
Free/Paid
Collaborative AI tool for creating and remixing images, useful for creative projects.

Runway ML [Runway ML] (https://runwayml.com/)
Free/Paid
AI tools for creative projects, including image and video generation.

NightCafe Creator [NightCafe Creator] (https://creator.nightcafe.studio/)
Free/Paid
AI art generator that creates artwork based on text prompts.

Designs.ai [Designs.ai] (https://designs.ai/)
Paid
AI-driven tool for creating logos, videos, banners, and mockups quickly.

Further AI Resources

4. Music and Sound

AIVA (AI Music Composition): [AIVA] (https://www.aiva.ai/)
Free (Limited) / Paid
Composes original music scores for projects and presentations.

Beatoven.ai [Beatoven.ai] (https://www.beatoven.ai/)
Free/Paid
AI tool for creating custom royalty-free music tracks.

Ecrett Music [Ecrett Music] (https://ecrettmusic.com/)
Free/Paid
AI tool that lets users create custom music for videos or projects.

Boomy [Boomy] (https://boomy.com/)
Free/Paid
AI-powered platform for creating and sharing original music, even with no musical experience.

5. Presentation and Visualization

Prezi [Prezi] (https://prezi.com/)
Free/Paid
AI-powered presentation software for creating dynamic and interactive presentations.

Lumen5 [Lumen5] (https://www.lumen5.com/)
Free/Paid
AI tool for converting text into video, ideal for creating video summaries and presentations.

Further AI Resources

6. Language and Translation

DeepL (AI Translation): [DeepL] (https://www.deepl.com/)
Free (Limited) / Paid
Provides highly accurate translations with contextual understanding.

Reverso Context (AI Translation and Synonym Generator)
(https://context.reverso.net/translation/)
Free (Limited) / Paid
Offers translations with context and suggests synonyms.

7. Video and Multimedia

Synthesia (AI Video Generation): [Synthesia] (https://www.synthesia.io/)
Paid
Creates videos with AI-generated avatars and voices.

Pictory (AI Video Creation): [Pictory] (https://pictory.ai/)
Free (Limited) / Paid
Automatically generates videos from text, blog posts, or scripts.

Animoto [Animoto] (https://animoto.com/)
Free/Paid
Video creation tool that uses AI to help students create engaging videos from images and text.

Further AI Resources

8. Research Assistance

Elicit (AI Research Assistant): [Elicit] (https://elicit.org/)
Free
Helps with literature reviews by generating summaries and suggesting relevant papers.

ResearchRabbit (AI Research Tool) (https://www.researchrabbit.ai/)
Free
Generates connections between academic papers and suggests related research.

Mendeley [Mendeley](https://www.mendeley.com/)
Free
AI-powered reference manager and academic social network for organizing research and collaborating with others.

Zotero [Zotero] (https://www.zotero.org/)
Free
AI-enhanced tool for managing research sources, generating citations, and organizing study materials.

9. Note Taking and Organization

Notion AI [Notion AI] (https://www.notion.so/product/ai)
Free/Paid
AI-powered productivity tool for note-taking, organizing study materials, and project management.

Scribe AI [Scribe AI] (https://scribeai.co/)
Free/Paid
AI tool that helps students take notes by transcribing and summarizing lectures.

This comprehensive list offers a range of generative AI tools across various categories that can support your studies. These tools can assist with everything from content creation and coding to image generation and study management.

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