

A low-angle, upward-looking photograph of several graduates in black academic regalia. They are smiling broadly and looking upwards, suggesting a moment of celebration or achievement. The background is filled with green foliage, likely trees, under a bright sky. The overall mood is joyful and triumphant.

Empowering Professors with AI: Gemini 2.0 and ChatGPT 4.0 in Higher Education

Reducing Burden, Enhancing Creativity, and
Boosting Productivity

Introduction

- Overview of AI in education.
- Introduction to Gemini 2.0 and ChatGPT 4.0.
- Objectives:
- Demonstrate how AI reduces workload burden.
- Explore its role in fostering creativity and productivity.
- Highlight benefits like increasing student engagement.



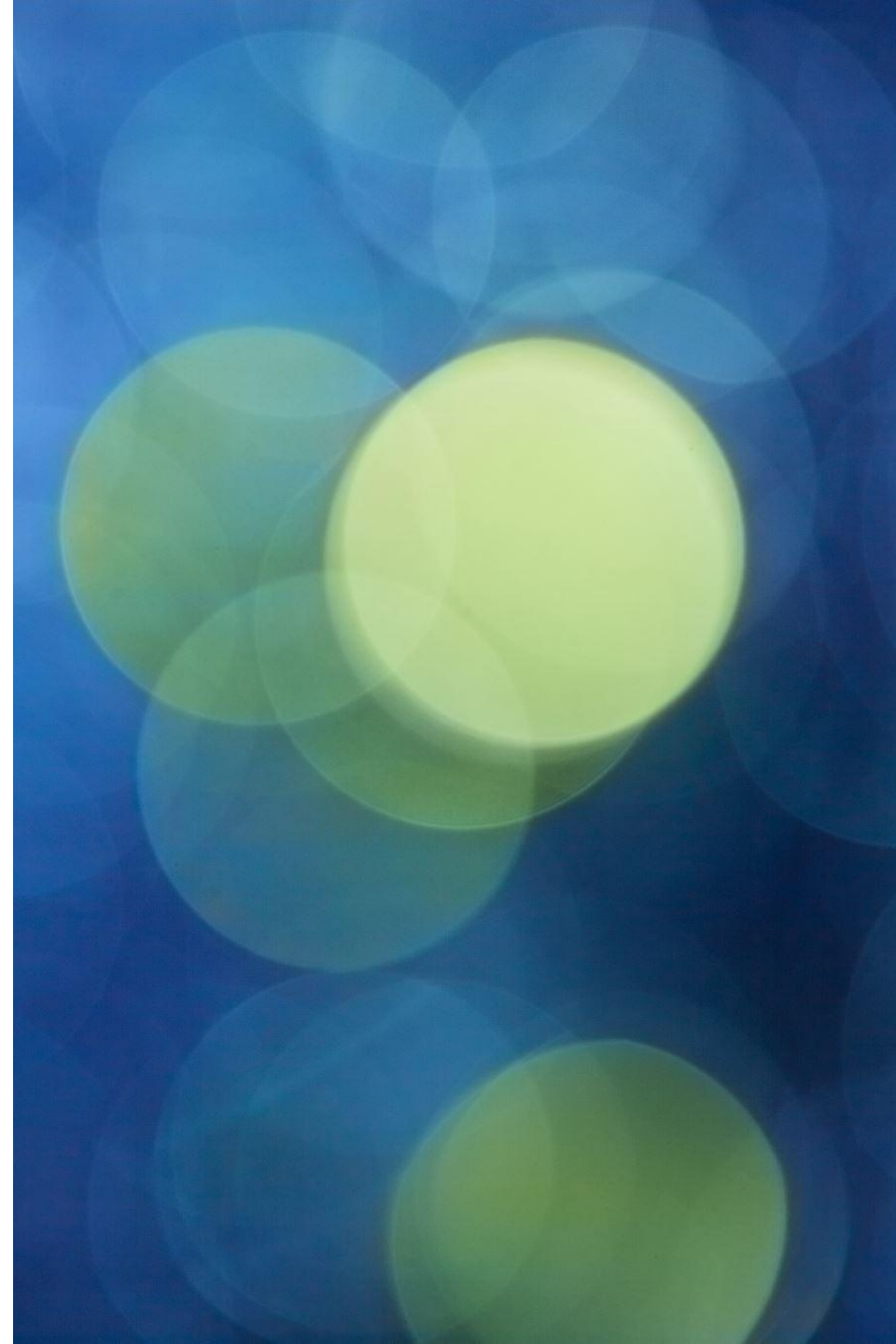
Challenges Faced by Professors

Administrative tasks.

Developing and maintaining course content.

Engaging students in meaningful ways.

The need for tools to save time and spark innovation.





Machine Learning Basics

Supervised Learning

Supervised learning involves training algorithms using labeled data, allowing machines to make predictions or decisions based on new, unseen data.

Unsupervised Learning

Unsupervised learning uses algorithms to identify patterns and relationships within data without pre-existing labels, enabling data-driven decision making.

Reinforcement Learning

Reinforcement learning involves algorithms learning through trial and error, optimizing actions over time based on rewards and penalties.



Understanding Human Language

Large language models are designed to understand and interpret human language, facilitating more natural interactions between humans and machines.

Text Generation

These models can generate coherent and contextually relevant text, making them useful for various applications such as content creation and automated responses.

Translation and Summarization

Large language models excel in tasks like translating languages and summarizing large texts, enhancing communication and accessibility.

Training on Vast Text Data

These models are trained on vast amounts of text data, enabling them to achieve high accuracy and fluency in language-related tasks.

Large Language Models

Artificial Generative Intelligence

Creating New Content

AI systems can generate new content like images, music, and text by learning from existing data.

Generative Adversarial Networks

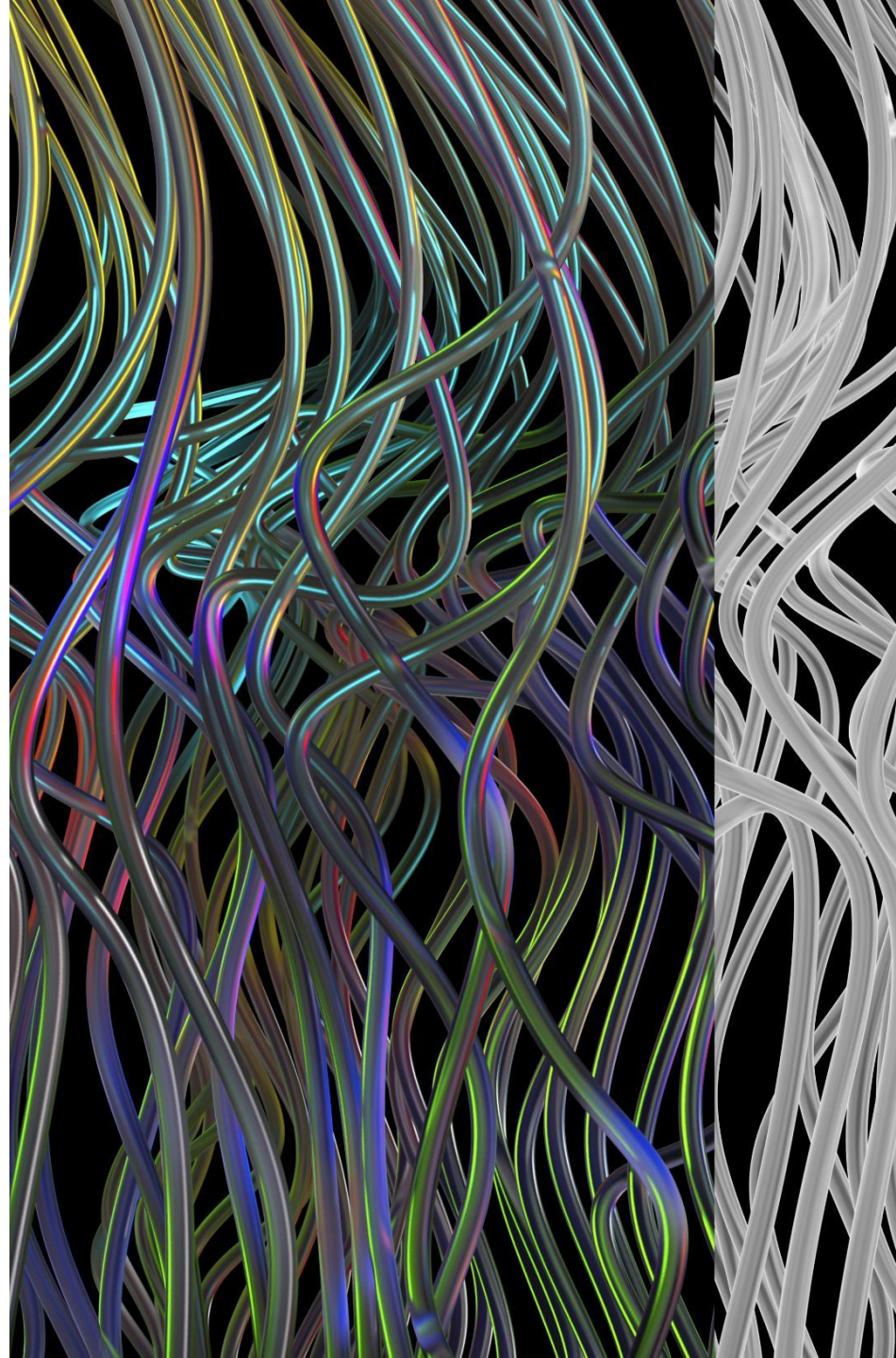
GANs use two neural networks to produce realistic outputs by competing against each other.

Variational Autoencoders

VAEs encode and decode data to create novel and unique outputs, enhancing AI's creative capabilities.

Innovation and Creativity

Generative AI pushes the boundaries of creativity and innovation, providing new ways to produce content.



Generative AI Revolution

Automated Content Creation

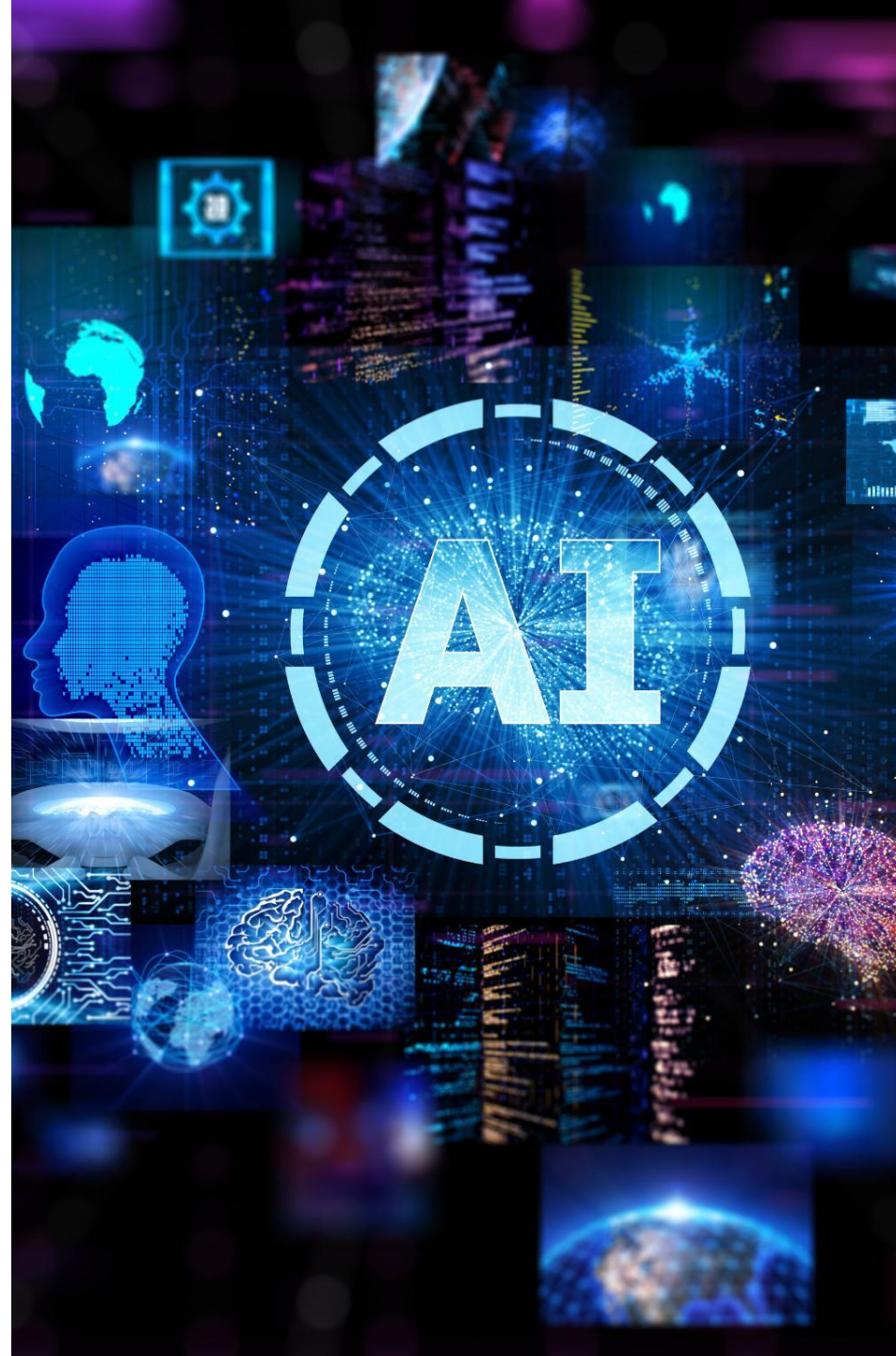
Generative AI enables the automatic creation of various content including art, music, writing, and programming (i.e., vibe-coding), revolutionizing creativity.

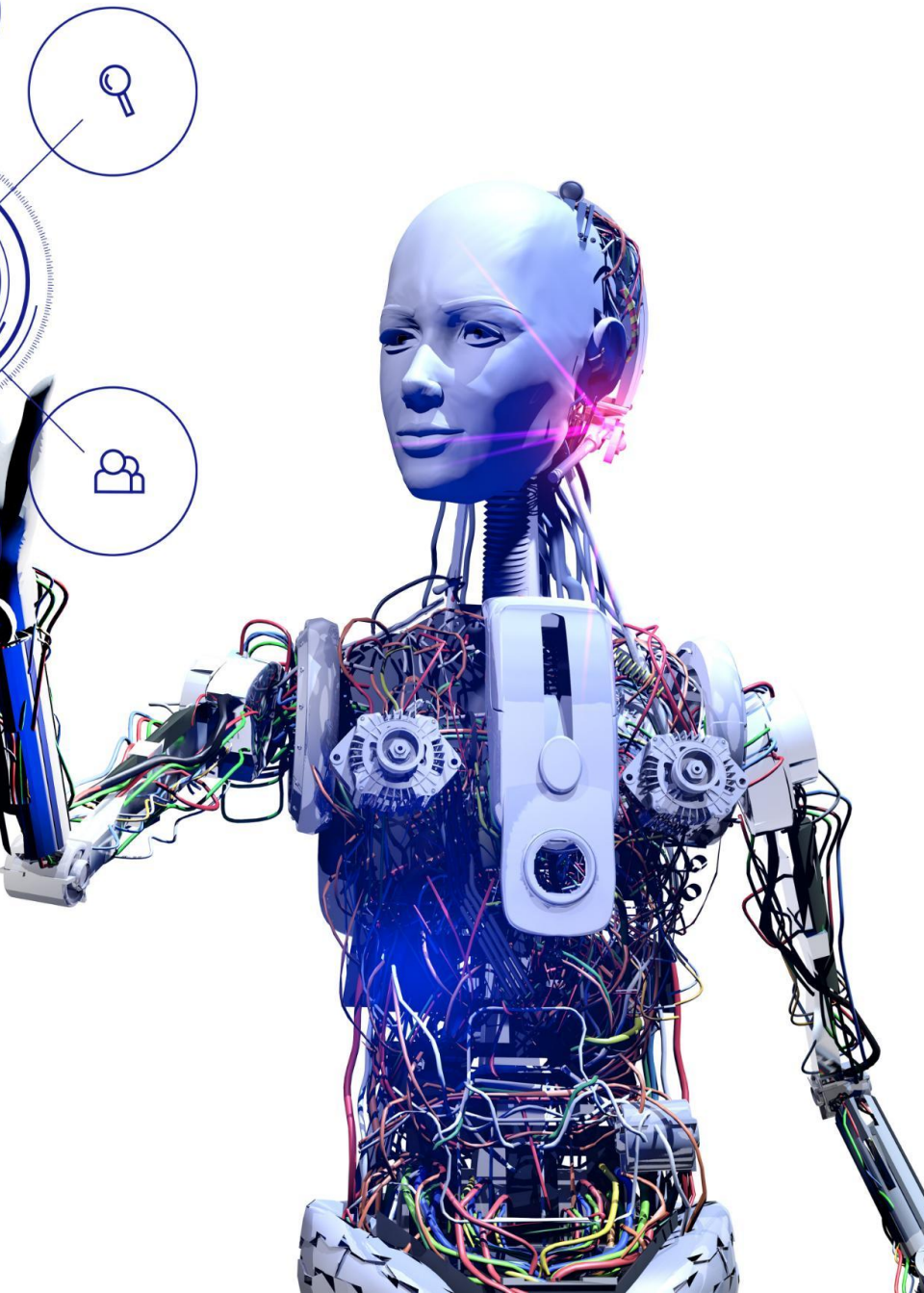
Advanced Algorithms

Advanced algorithms in generative AI produce new and unique outputs, driving innovation across multiple industries.

Sector Impact

Generative AI provides opportunities for innovation and efficiency in entertainment, marketing, and software development.





Understanding Agentic AI

Definition of Agentic AI

Agentic AI systems are capable of autonomous decision-making and actions based on their programming, data inputs, and learned experiences.

Resources for Study

Study resources include scholarly articles, AI development frameworks, and research papers from leading institutions like MIT and Stanford.

Significance in Various Fields

Agentic AI is growing in significance in fields such as robotics, autonomous vehicles, and smart systems.

Overview of AI Models



Introduction to Gemini 2.0 and ChatGPT 4.0.



Key features:



Natural language processing capabilities.



Versatility in content creation and ideation.



Accessibility and ease of integration into academic workflows.

Applications in Higher Education

Course Content Development:

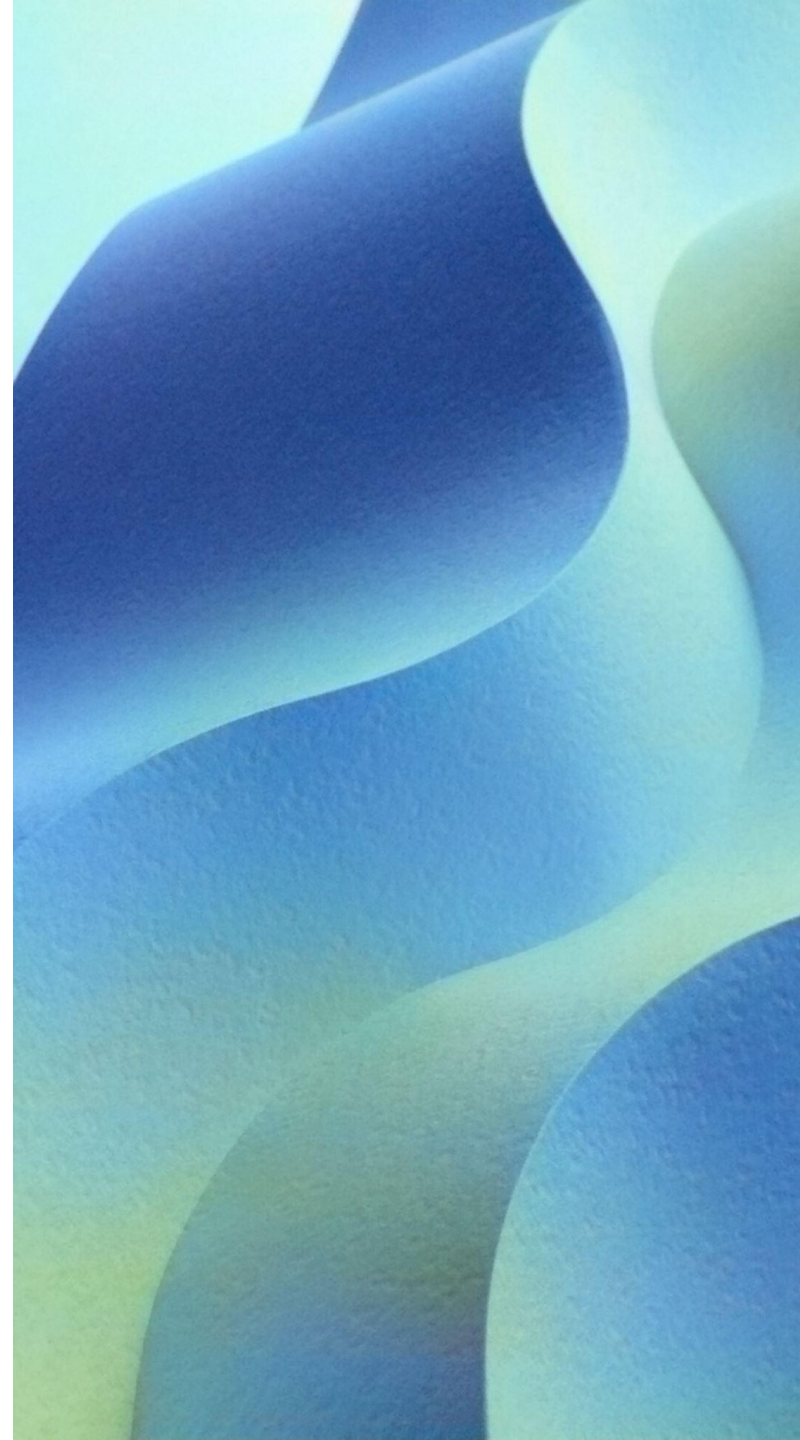
- Creating course outlines tailored to learning outcomes.
- Updating and generating lecture slides.

In-Class Activities:

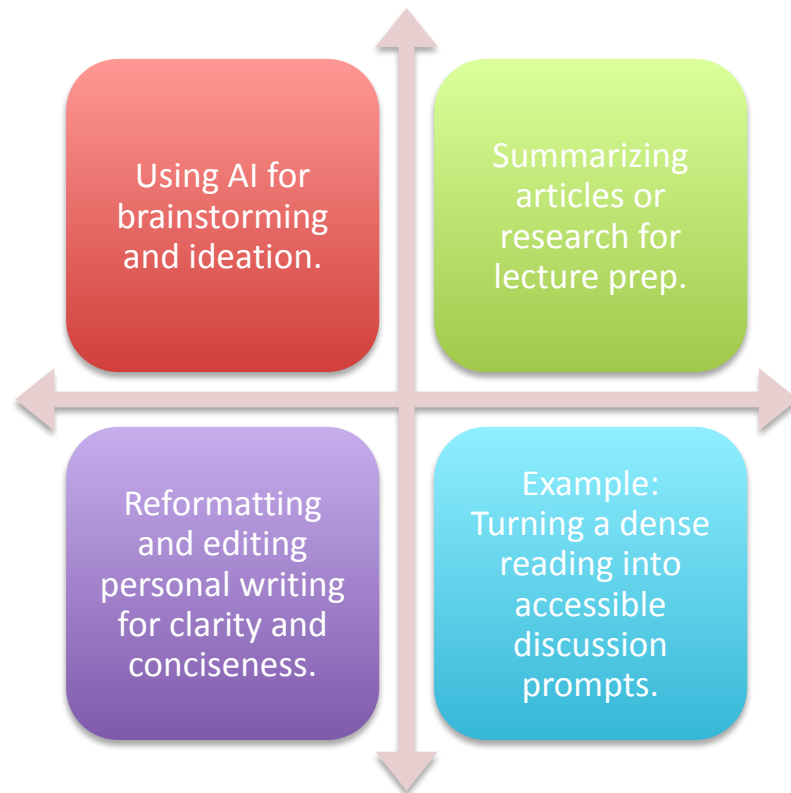
- Crafting engaging discussion questions for small groups.
- Designing problem-solving exercises and case studies.

Assessment Creation:

- Developing quiz and exam questions from curated material.
- Creating grading rubrics and feedback templates.
- Tip: [AI-Resistant Rubrics](#)



Enhancing Creativity and Productivity



Increasing Student Engagement

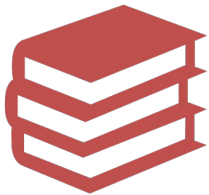
Personalized learning experiences with Agentic AI.

Designing interactive assignments and group projects.

Encouraging student use of AI for learning/studying and research.

Examples: ChatGPT as a study partner or peer reviewer.

Ethical Considerations



Academic integrity:
Encouraging proper citation
and responsible use.



Transparency with students
about AI usage.



Balancing AI assistance with
maintaining academic rigor.

Success Stories and Testimonials

Personal experiences:

Examples of reduced workload burden through:

- Improved quality of teaching materials, & less time.
- Positive feedback from students on AI-enhanced activities.
- Assist in academic and research analysis and synthesis of information

Interactive Demonstration

Demonstration of
Gemini or
ChatGPT:

Develop a short
workshop

Assistance with
course
development and
revisions. ChatGPT

NotebookLM for Faculty

Summarizing Information

NotebookLM uses Machine Learning algorithms to summarize vast amounts of information, making it easier for faculty to digest and utilize.

Organizing Notes

The tool efficiently organizes notes, helping faculty keep their information well-structured and easily accessible.

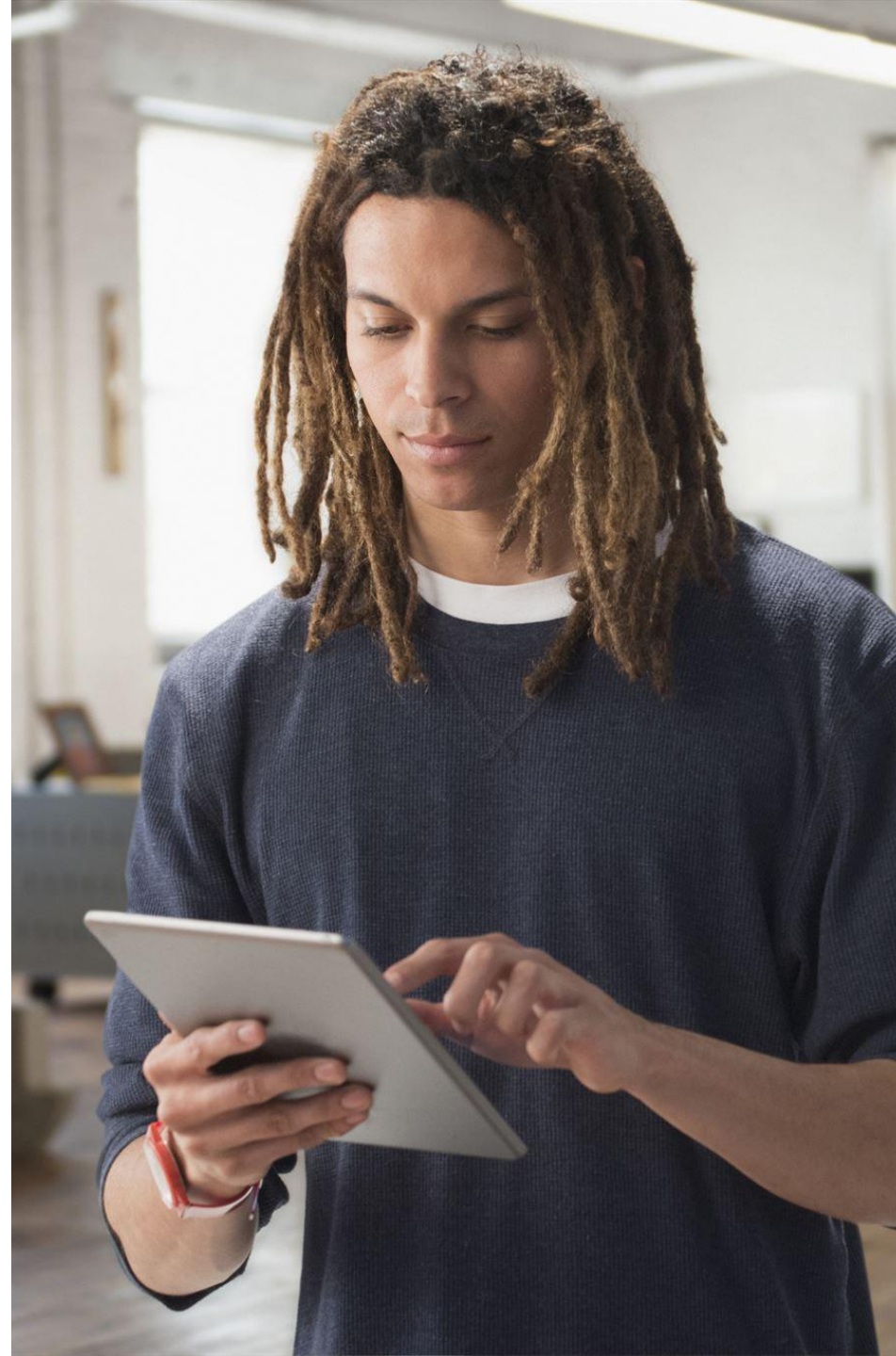
Extracting Key Insights

NotebookLM extracts key insights from extensive data, saving time and improving faculty productivity.

Quick Searches

The tool facilitates quick searches, allowing faculty to find necessary information promptly and efficiently.

[Post from Morten Rand-Hendricksen](#)



Tips for Implementation

Start

- Find one or more AIs free to you and start to use it

Identify

- Identify repetitive tasks to automate or uses for ideation.

Begin

- Begin with small integrations (e.g., quizzes or summaries).

Explore

- Explore available training resources for Gemini and ChatGPT.

Encourage

- Encourage experimentation and feedback loops.

Resources

LinkedIn –
follow Ethan
Mollick

- Substack – (free subscription) app within LinkedIn that allows access to content. Can follow others AI experts.

Notebook LM

- One Useful Thing (free subscription)
- Link to Ethan Mollick's – Which AI to Use Now...

Resources

[HubSpot](#), download a guide to help you create an [AI personal assistant](#).



Resources

[Syllabus policies for Generative AI](#)

[University Policies on AI](#)

[Institutional AI Policies & Governance Structures](#)

[Sensemaking & Translating:
Finding the Right Balance of
Usage With Generative AI](#)




Conclusion

Recap:

AI reduces
burden and
fosters
creativity.

Enhances
productivity and
student
engagement.

Call to action:



Explore how Gemini,
NotebookLM, and other AI
platforms can transform
your teaching practices.