# ## Assignment Draft 1

## ### Assignment 1: Introduction to Generative AI

\*\*Rationale:\*\*

This assignment aims to introduce students to the basic concepts of generative AI, its capabilities, and limitations. It sets the foundation for understanding how AI can be a tool in their learning and professional development.

\*\*Objectives:\*\*

- Understand the basic principles of generative AI.

- Identify the potential uses and limitations of AI in academic and professional settings.

- Reflect on ethical considerations when using AI.

\*\*Activities:\*\*

1. \*\*Reading and Video Assignment:\*\*

- Students will read introductory materials on generative AI (e.g., articles, textbook chapters) and watch a video lecture explaining AI concepts and applications.

- \*\*Assessment:\*\* Students will answer a series of comprehension questions and participate in an online discussion forum to share their insights and questions.

2. \*\*Classroom Discussion:\*\*

- In-class discussion on the ethical implications of AI, facilitated by guiding questions about privacy, bias, and accountability.

- \*\*Assessment:\*\* Participation in the discussion will be assessed based on engagement and the quality of contributions.

3. \*\*Reflective Essay:\*\*

- Students will write a short essay reflecting on how AI might impact their field of study and potential ethical concerns.

- \*\*Assessment:\*\* Essays will be graded on understanding, critical thinking, and articulation of ideas.

# ## Handout: Progressive Assignments on Generative AI

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- Reflect on ethical considerations when using AI.

\*\*Activities:\*\*

1. \*\*Reading and Video Assignment:\*\*

- Read introductory materials on generative AI.

- Watch a video lecture on AI concepts and applications.

- \*\*Assessment:\*\* Answer comprehension questions and participate in an online discussion forum.

2. \*\*Classroom Discussion:\*\*

- Discuss the ethical implications of AI.

- \*\*Assessment:\*\* Participation based on engagement and quality of contributions.

3. \*\*Reflective Essay:\*\*

- Write a short essay on AI’s impact on your field and potential ethical concerns.

- \*\*Assessment:\*\* Graded on understanding, critical thinking, and articulation.

\*\*Rubric:\*\*

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# #**# Models & Examples**

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\*\*Activities and Steps:\*\*

1. \*\*Reading and Video Assignment:\*\*

- \*\*Steps:\*\*

1. Read the provided articles and textbook chapters on generative AI.

2. Watch the video lecture explaining AI concepts and applications.

3. Take notes on key points, focusing on definitions, examples, and potential uses.

- \*\*Assessment:\*\*

- \*\*Comprehension Questions:\*\*

1. What is generative AI, and how does it differ from other types of AI?

2. List three applications of generative AI in different fields.

3. What are some limitations of generative AI?

- \*\*Example Answers:\*\*

1. Generative AI refers to AI systems that can generate new content, such as text, images, or music, based on training data. It differs from other types of AI, which may focus more on classification or prediction tasks.

2. Applications of generative AI include creating art (e.g., DALL-E), writing assistance (e.g., GPT-3), and drug discovery (e.g., AI-generated molecular structures).

3. Limitations of generative AI include potential biases in generated content, dependency on large datasets, and ethical concerns related to content creation and usage.

2. \*\*Classroom Discussion:\*\*

- \*\*Steps:\*\*

1. Prepare for the discussion by reviewing notes and identifying key ethical issues related to AI.

2. Participate in the discussion, sharing insights and questions.

3. Listen to peers and engage with their viewpoints.

- \*\*Assessment:\*\* Participation will be assessed based on engagement and the quality of contributions.

- \*\*Example Contribution:\*\* "One ethical concern with generative AI is data privacy. Since AI models require large amounts of data, there is a risk of misuse or exposure of personal information. It's essential to implement strict data protection measures."

3. \*\*Reflective Essay:\*\*

- \*\*Steps:\*\*

1. Reflect on the readings, video, and classroom discussion.

2. Outline the essay, focusing on how AI might impact your field and ethical considerations.

3. Write the essay, incorporating personal reflections and examples.

4. Review and edit the essay for clarity and coherence.

- \*\*Assessment:\*\* Essays will be graded on understanding, critical thinking, and articulation of ideas.

- \*\*Example Essay Excerpt:\*\*

"Generative AI holds significant potential in the field of education. Personalized learning experiences can be created through AI, adapting content to individual student needs. However, ethical concerns such as data privacy and bias must be addressed. Ensuring transparent AI systems and protecting student data are crucial steps in leveraging AI's benefits responsibly."

# **## Readings, Cases, Problems**

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- Understand the basic principles of generative AI.

- Identify the potential uses and limitations of AI in academic and professional settings.

- Reflect on ethical considerations when using AI.

\*\*Activities and Steps:\*\*

1. \*\*Reading and Video Assignment:\*\*

- \*\*Steps:\*\*

1. \*\*Readings:\*\*

- "Artificial Intelligence: A Guide for Thinking Humans" by Melanie Mitchell (Chapters 1 and 2)

- "Generative Adversarial Networks: A Comprehensive Review" (available on arXiv)

- "Ethics of Artificial Intelligence and Robotics" by Vincent C. Müller (published in The Stanford Encyclopedia of Philosophy)

2. \*\*Video:\*\*

- Watch the TED Talk "The Wonderful and Terrifying Implications of Computers That Can Learn" by Jeremy Howard

3. Take notes on key points, focusing on definitions, examples, and potential uses.

- \*\*Assessment:\*\*

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# **## Deeper Models**

## ### Assignment 1: Introduction to Generative AI

\*\*Reflective Essay Example:\*\*

Title: \*\*The Role and Ethical Implications of Generative AI in Modern Education\*\*

\*\*Introduction:\*\*

Generative AI represents a significant breakthrough in artificial intelligence, enabling machines to create new content, such as text, images, and music, based on the data they have been trained on. As an aspiring educator, understanding the potential and ethical implications of generative AI is crucial for leveraging this technology effectively in the classroom.

\*\*Understanding Generative AI:\*\*

Generative AI systems, like GPT-3, are designed to produce human-like text by predicting subsequent words based on the input they receive. These systems have a broad range of applications, from writing assistance and content creation to enhancing virtual learning environments. The key to their functionality lies in large-scale neural networks trained on vast datasets, allowing them to generate contextually relevant and coherent content.

\*\*Applications in Education:\*\*

In the educational sector, generative AI can transform teaching and learning experiences. Personalized learning is one of the most promising applications. By analyzing individual student performance, generative AI can create customized learning paths that address specific needs and learning paces, thereby improving educational outcomes. Additionally, AI-driven tutoring systems can provide real-time feedback and support, helping students grasp complex concepts outside the traditional classroom setting.

\*\*Ethical Considerations:\*\*

While the benefits of generative AI are substantial, they come with significant ethical concerns. Data privacy is paramount; AI systems require access to extensive datasets, including personal student information, to function effectively. Ensuring this data is collected, stored, and utilized ethically is critical to protecting student privacy. Moreover, the potential biases embedded in AI models can perpetuate or even exacerbate existing inequalities. It is essential to implement measures to identify and mitigate these biases to promote fairness and inclusivity.

\*\*Conclusion:\*\*

Generative AI offers exciting opportunities to enhance educational practices through personalized learning and intelligent tutoring systems. However, educators must remain vigilant about the ethical implications, particularly concerning data privacy and bias. By understanding and addressing these challenges, we can harness the power of generative AI to create more effective and equitable educational environments.

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