An Introduction to Generative AI

Generative Artificial Intelligence, also known as GenAI, is a tool that can generate text, images, code, or other content. This handout will help students become familiar with the language and concepts associated with the use of GenAI. For more information about using GenAI to support or supplement academic studies, view the Academic Center for Excellence's (ACE) "Using Generative Artificial Intelligence as an Academic Tool" handout.

What is Generative AI?

GenAI is a complex computer program that:

- Is programmed to respond to user prompts and participate in human-like conversations.
- Uses information gathered from books, articles, the Internet, and other publicly available resources to produce content. This is called the GenAI's dataset.
- Incorporates large language models (LLMs) to generate human-like responses.

How does Generative AI Work?

Generating content with GenAI begins when the user enters a prompt, or input, into a GenAI program.

- Using human-like language, GenAI provides a response, or output, based on the dataset with which it was trained.
- It predicts what the next word or phrase could be by searching for patterns, based on what it has learned.
- Most free GenAI programs do not search the Internet and instead find answers within their datasets, which might not be current.

Generative AI Considerations

Generative AI content should be verified for accuracy.

- GenAI can create false information. The made-up content can appear legitimate and is commonly referred to as "hallucinations."
- Most free GenAI programs do not have access to the Internet to provide current information or real-time updates.
- Always check and verify information received from GenAI with trusted sources, such as Germanna Library databases.
- Any verified information from GenAI that is not considered common knowledge should be cited if used in academic work.

GenAI presents privacy concerns.

- GenAI may retain any information input through a prompt, so users must be very cautious about including any personal information.
- GenAI may use information, phrasing, or images from user prompts for future responses. For example, any photograph submitted to GenAI could appear as output for other users.

Other considerations when using GenAI:

- Depending on how a GenAI model was programmed, a prompt is unlikely to receive the same output when given to different models or repeatedly used with the same model.
- GenAI cannot think for itself, process information without instruction, or feel emotions.
- Any generated content, including text and images, could be biased or stereotypical.
- Some models will not respond to prompts containing certain language or instructions to prevent the creation of potentially offensive content.
- Always be sure to check each individual professor's GenAI policy before using it for an assignment.

Learn more about GenAI

For a more in-depth introduction and explanation of Generative AI, students can complete ACE's "An Introduction to Generative AI" interactive module.

For further information about applying GenAI, view ACE's "Generative Artificial Intelligence" webpage.