

GUIDELINES FOR RESEARCH STAFF BASED ON INTERNAL POLICY ON GENERATIVE ARTIFICIAL INTELLIGENCE

1. Introduction and Policy Framework

This Policy was created to assist the university community (Students, Faculty, Researchers, Administrative Staff) in understanding the capabilities of Generative Artificial Intelligence, to effectively utilize the technology with responsibility and critical thinking, ensuring ethical standards, intellectual property, and transparency.

Terminology and Introduction

Artificial Intelligence (AI) is the capability of a computer to perform tasks that are usually associated with intelligent beings. **Generative Artificial Intelligence (GAI)** is the form of AI that can generate new content (text, image, video, code, etc.) in response to commands written in natural language. Although forms of AI have existed for decades, the modern training of GAI models has changed the dynamic, due to the increase in computing power and the use of massive volumes of data. Examples of GAI tools are ChatGPT (text generation) and DALL-E (image generation) by OpenAI, and Gemini (text generation) by Google.

AI has contributed catalytically and radically to changing how we perceive our environment, process available data and information, and proceed with actions and decisions. Specifically, the rapid development of GAI, which can generate new content based on user instructions, has brought new perspectives and challenges in education, research, and the daily operation of organizations worldwide.

Higher education institutions, as the quintessential organizations that operate across these three pillars, must approach the new perspectives and challenges in a coordinated manner. The Open University of Cyprus, focused on disseminating knowledge through technology, seeks to ensure that GAI is used in a manner that honors ethical standards, intellectual property, transparency, and security for all involved.

The range of GAI technologies is vast and constantly growing. This Policy does not seek to enumerate the technologies or analyze the consequences of their use. Indicatively, the Policy refers to GAI technologies that belong to the following categories:

- **Synthesis:** Creation of digital content in the form of text, image, video, sound, or compositions of primary data sources that may have the above forms.
- **Conversion:** Adaptation of content with the goal of customization, summarization or extension, changing the style of presentation, translation into another language, etc.
- **Analysis:** Drawing conclusions, critical review, answering questions, statistical processing, identifying source similarities, and other forms of pattern recognition.

Policy Framework

This Policy has been designed to provide guidelines to the entire university community. Thus, it concerns students who may use GAI technologies for the preparation of assignments or learning of new skills, faculty and research staff for the integration of these technologies into teaching and research, and the administrative staff for the utilization of GAI with the goal of more efficient operation and organization of the University.

It is understood that this Policy does not seek to limit innovation or exploration, nor the choice of members of the university community on how to utilize AI in the way they deem most appropriate for achieving the University's goals. Instead, this Policy seeks to draw attention to some known (as of the date of the Policy's writing) capabilities and weaknesses of AI, and specifically GAI, ensuring through common understanding that the use of AI within the Open University of Cyprus will be done in a way that respects the rights, responsibilities, and values of the university community.

2. Recommendations and Guidelines: Research Staff

The use of GAI within the University is not limited to educational issues but can also significantly contribute to academic research. Although what is considered acceptable use of AI tools may vary from one scientific area to another and from one scientific conference or journal to another, the Policy provides a basis for reflection by the University's research staff. In any case, researchers must always follow the principles and rules of their scientific communities, with a focus on transparency, academic and research integrity, and proper citation of sources.

Opportunities and Best Practices

1. Data analysis: In many sciences, researchers are called upon to manage and analyze large volumes of data. AI can be used for automated data collection and processing, identifying potential patterns and correlations in the data, and preliminary testing of quantitative or qualitative hypotheses in relation to the data.
2. Finding and synthesizing knowledge: The first step in academic research is the collection and synthesis of existing knowledge. Given that knowledge is published in many scientific articles, collecting and synthesizing it is time-consuming. The use of reliable GAI tools can save researchers' time for creating initial hypotheses, which must subsequently be tested and confirmed. Interaction with GAI tools should be documented for reproduction.
3. Creation of models and algorithms: GAI can be used to generate code, complex models, and algorithms for studying and predicting various phenomena. Models, as in any scientific field, should be approached as hypotheses that gain significance and validity only through further systematic testing.
4. Suggesting research topics: GAI tools can suggest potential research activity topics for writing research articles, proposals, presentations, etc. Whether the suggested topics are innovative, and worthy of further research work should be carefully checked by the involved researchers independently.
5. Assistance in writing research texts: GAI can improve a research text to match the required level of various publishing houses, through review and suggestions for improving syntax, tone, and length of the text. However, these suggestions should not be accepted uncritically, and without adherence to the rules set forth by the publisher.

Challenges and Points Requiring Attention

1. Biased conclusions: AI tools are trained using large volumes of data. This data could be biased and reflect the personal views of the data creators. This means that GAI is prone to biased conclusions, which must be approached with a particularly critical disposition.
2. Data protection: AI tools may collect data that users share during the usage process. In the context of data analysis for academic research, the primary data may contain sensitive or personal information. Researchers must exercise the necessary caution to ensure the required permissions for the use/share of this data are obtained and that the existing laws and regulations regarding the protection of personal data are not violated.
3. Transparency of research findings: AI tools are often 'black boxes', whose conclusions are not documented in the usual way that each scientific community deems acceptable. Therefore, the use of such conclusions could call into question the transparency and reliability of the entire research process followed.
4. Intellectual property rights: AI tools utilize, in a complex and not directly obvious manner, vast amounts of information from a plethora of sources and creators who may not have given their consent. It is, therefore, not self-evident that the intellectual property rights of the material produced by GAI tools belong to the user. Ignoring this parameter may raise ethical and legal issues for the researcher.
5. Reproduction of results: Even with full documentation of a user's interaction with GAI tools, the reproduction of results cannot be taken for granted, due to the probabilistic way in which AI tools operate, since the same exact interaction may produce different results with each use.