Perspectives of the University of Primorska on the Use of Artificial Intelligence

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Introduction

The working group for the development of the document "Perspectives of the University of Primorska on the Use of Artificial Intelligence" has developed ethical guidelines and recommendations for using artificial intelligence at the University of Primorska, presented in this document. In their work, they considered:

- The Code of Ethics of the University of Primorska.
- Guidance for generative AI in education and academic research (UNESCO).
- Ethical guidelines on the use of artificial intelligence and data in teaching and learning for educators (European Commission).

Purpose

The purpose of the development of the document is to support all stakeholders of the University of Primorska in understanding the potential of artificial intelligence-enabled tools (AI-enabled tools) and raising awareness of possible risks, enabling stakeholders to critically and ethically use these tools. The array of stakeholders encompasses university teachers and associates, academic researchers, administrative staff, other employees, and students.

Definition of Terms: Artificial Intelligence and Generative Artificial Intelligence

Artificial Intelligence (AI) is a field of computer science and informatics focusing on developing systems capable of performing tasks that typically require human intelligence (e.g. learning or reasoning, interpreting and processing information, problem-solving, predicting, decision-making, and sometimes creation) (Kok et al., 2022).

Generative Artificial Intelligence (GenAI) refers to tools used for creating new content, such as texts, images, sounds, videos, software codes, etc. (Budhwar et al., 2023). Examples of such tools for automatic text generation include ChatGPT, Bard, LLaMA, for image creation DALL-E 2, DreamStudio, and for video creation Synthesia, etc.

GenAI operates by learning the structures and patterns of vast amounts of input data provided by the user to the algorithm, enabling the creation of new (output) data (texts, images, videos, etc.). GenAI acquires input data from the internet (data from websites, social networks, etc.). It creates new content by analysing, for example, the sequence and distribution of words, image pixels, or other elements of the input data. The results are generated using statistical methods.

Ethical Guidelines for the Use of Artificial Intelligence at the University of Primorska

Artificial Intelligence (AI) and Generative AI (GenAI) are present in the higher education sector, and their use is unavoidable. It is crucial to familiarise ourselves with and examine the possibilities for using AI and GenAI in education and academic research, considering potential risks. The goal for all stakeholders is to achieve responsible, ethical, and sensible use of these tools. The ethical guidelines are:

1. Responsibility,
2. Transparency,
3. Competence, and
4. Inclusivity.

1. Responsibility

The UP advocates and supports only responsible use of AI at all levels. This includes responsibility towards the environment and nature, social responsibility and responsibility towards all stakeholders who use AI or its results. AI consumes a lot of energy and water to learn and operate, and we need to be aware of the environmental and natural impacts of its use. The introduction of AI into society can also bring inequalities and affect employment opportunities.

Only humans can take responsibility for the results and consequences of use; authorship cannot be attributed to AI. Even if content is created using AI (e.g. GenAI), it is still the responsibility of the user to be aware that content created using these tools may be inaccurate, incorrect, inappropriate or biased. At the same time, it is important to consider that companies developing AI systems are usually privately owned and therefore expect their products to be profitable, which may lead to commercial exploitation of the data they have obtained from users.

1.1 Higher Education

The potential of AI and GenAI in education includes the use of AI in teaching, learning, assessment and administrative support of the learning process. Some tools can already support students' independent learning (e.g. to help overcome the creative block in writing, to search for potential ideas or discussion questions on a topic, or to suggest alternative ways of organising the content of a paper). AI is also used by some tools to monitor remote assessment and evaluation or to predict student performance (e.g. learning analytics). However, the potential of AI and GenAI in education often remains untapped, especially in the languages of minority nations where the development of such tools is often economically unviable.

The use of GenAI to directly generate final content is unacceptable. Users with weak or limited domain knowledge risk accepting GenAI data that may be superficial, inaccurate or even harmful without critical evaluation.

Students are required to demonstrate creativity and critical thinking and to produce content independently (e.g. articles, term papers, theses) where the focus is on the process of creation and not just the product. GenAI tools can be used as supportive tools in this context, meaning that they can be an additional source of information, but not the final content. The results produced by GenAI tools should always be carefully checked and compared with relevant sources. As such, they can only represent one starting point for further processing. It is also important to be aware of possible intellectual property infringements (content and materials created by GenAI may infringe the intellectual property of others, and GenAI may use content and materials created and shared on the internet by us).

1.2 Academic research

In academic research, AI systems can automate analysis and academic research processes, increase the speed and efficiency of processing huge amounts of data, improve understanding of complex phenomena and provide solutions to complex problems.

The risks of using AI and GenAI in academic research relate mainly to privacy and the protection of personal and other sensitive data. Problems can also arise from inaccurate or biased data from which AI learns, misinterpretation of results (mainly due to the ambiguity of the algorithms used) and intellectual property infringements. An additional problem is the lack of more well-defined ethical standards to help

in the ethical assessment of academic research and academic research processes using AI and involving user-generated data.

1.3 Administrative services

In the field of administrative services, the advantage of using AI and GenAI is mainly to optimise administrative processes. One example is the use of chatbots, which can relieve the burden on administrative services (e.g. by answering questions from prospective students).

The risks here are related to the protection of personal and other sensitive data, bias (if algorithms are based on biased, incomplete and outdated data), scalability (constant need to update data) and loss of human contact, which can affect the quality of the user experience.

When using GenAI tools to create different types of content, it is important to be aware of potential intellectual property infringements (content and materials created with GenAI may infringe the intellectual property of others or use content and materials that we have created and shared on the Internet). We also need to be aware of the risks associated with privacy and the protection of personal and other sensitive information. GenAI tools can be used as ancillary tools, which means that they can be an additional source of information, but not the final content (the results can only be one starting point for further processing). Problems can arise due to inaccurate or biased data, or misinterpretation of the results. Therefore, the results generated by GenAI tools should always be carefully checked and weighed.

2. Transparency

The use of AI systems by UP stakeholders is only allowed if it is transparent in all respects and at all levels. All sources, tools and persons who have influenced the creation of content or the development of ideas must be duly acknowledged following the criteria and conditions specifically defined for such cases. The unauthorised use of (Gen)AI to generate content is not allowed.

2.1 Higher Education

Writing stimulates thinking and understanding of complex phenomena and concepts, and metacognitive functioning. It stimulates students' cognitive development and provides teachers with insights into the processes of knowledge acquisition, which can be a starting point for further learning and an opportunity to assess knowledge. This is why it is important that students clearly and accurately cite in their texts all the sources, tools and people that have influenced the development of their ideas – including the use of (Gen)AI.

Teachers set a good example of academic standards in writing through their texts aimed at educating students. Just as the study process needs to include correct and consistent citations of sources in writing, it is also essential to inform students about the rules of using AI and GenAI in every subject and in other forms of education. This is because the use of AI, both in its use and in its assessment, depends on the specific field or subject.

Students can only use GenAI (e.g. ChatGPT) with the permission of the course instructor. The use of these tools must be announced and documented in detail and it must be explained how they have influenced the realisation of the activity. Any content generated by GenAI must be identified according to the criteria and conditions specifically defined for such cases (e.g. in the text with a quote, or through textual commentary on an image, audio, or video. In this case, the "prompt" question and the answer

obtained must be clearly recorded and accompanied by a citation, following the instructions of each UP Faculty).

Faculties should also be transparent in their use of plagiarism detection tools, learning analytics and monitoring systems for remote examinations using AI. Students should be made aware of the functioning, purpose and use of these tools and be made aware of their rights.

2.2 Academic research

In the field of academic research, ethical guidelines and regulations relating to the use of (Gen)AI in academic research must be strictly followed, i.e. the sources of the data, the GenAI tools used, and all other components of the academic research that contributed to the results must be clearly stated.

Owners and developers of AI (especially GenAI) are often not transparent in documenting the data used to develop the AI, the complex algorithms used in these tools, and the uses and limitations of these tools. This can make it unclear how algorithms arrive at certain results, how to interpret them or how to validate them. The use of AI in academic research therefore poses many ethical challenges and risks.

Academic researchers have a responsibility to use AI in academic research ethically and transparently and must be precise about the AI used and the reasons for its use. They should document how it is used and the risks it poses, and explain if and how the use of AI has affected academic research. Documentation will enable the Ethics Committee, editors and reviewers to judge the appropriateness of the use of AI in a particular study.

Transparency is also needed in the use of AI in scientific publishing, where AI tools can be used in editorial work (e.g. to find plagiarism and statistical errors, to summarise and assess the quality of papers).

2.3 Administrative services

Our administrative services also follow ethical guidelines and regulations on the use of Gen(AI) and the use of data in this field. Where AI tools are used to develop ideas or create content, they must be properly acknowledged. Specific criteria and methods of citation should be defined for specific cases (e.g. ChatGPT prohibits the publication of texts that do not state that they have been created with GenAI).

3. Competency

The UP is not opposed to the use of AI systems but stresses that they have to be used competently and ethically, which can only be based on appropriate and continuous education and training. All UP stakeholders should therefore have the opportunity to receive appropriate education and training in the ethical use of AI systems and tools.

Only adequate knowledge and competent use of these systems can reduce the risks arising from their use. Risks can be associated both with the results of the use of AI (including GenAI) and with the data input itself. Education and training in this area should include an understanding of content creation (learning, use of data, algorithms, filters, etc.) and the risks associated with data input (protection of personal data, copyright, intellectual property, etc.).

To manage risk, it is important to understand how the GenAI system works. For example, the texts generated by GenAI tools can sound natural and convincing enough to mask any untrue, biased or outdated elements in the texts. Errors can quickly go unnoticed, especially if the user is not familiar with the content. The quality of the information generated by GenAI tools depends on the quality of the texts

and sources included in the dataset for the learning algorithms. Information from the tool developer about the data included in the dataset (which may include untested data) is therefore crucial to critically evaluate the results obtained. It is also important that users are aware that the data they enter into the AI tools will be stored in the database of the chosen AI tool, together with the results generated.

To avoid the risks associated with the competent and ethical use of (Gen)AI systems, users should strictly review how GenAI tools collect and store data and how they use or intend to use them in the future. The latter should be taken into account when making responsible decisions about what data to share with these tools. All users are committed to the responsible and ethical protection and use of personal data, which means that even when using AI tools, we do not enter data of a confidential nature, such as personal data (e.g. personal data of students and other stakeholders) and other confidential data, e.g. organisational data (financial data, employee data, content of internal documents, etc.), student products or research data, etc.

3.1 Higher Education

To avoid risks related to the competent and ethical use of AI systems in education, providers should also explicitly define the permitted use or prohibition of the use of GenAI in terms of how the use of GenAI affects the acquisition of all competencies set out in the curricula. Providers should ensure that conditions are such that, despite the use of (Gen)AI, the acquisition of all competencies set out in the curricula is ensured.

They should also identify opportunities where the inclusion of GenAI would add value to the learning process (e.g. identification of good practices in other institutions, literature review). Examples of such use include critical discussion of the correctness of the GenAI answer to a particular question or the search for possible errors in it, critical evaluation of products, etc.

Programme providers should identify elements of the assessment in their curricula where there is a risk that content may be generated directly by GenAI and look for possible alternatives (e.g. simpler tasks carried out in a controlled environment during contact hours).

When producing written content (e.g. seminar assignments), students should be encouraged to search for materials independently and paraphrase findings appropriately. Students should also be encouraged to produce content as independently as possible.

There are also risks in the monitoring of remote assessments (exams, seminars, homework, etc.) by AI and in the use of learning analytics: AI may be biased in identifying unauthorised actions (sounds, movements, etc.) during the assessment, and learning analytics may be biased in its interpretation of behaviour patterns, which may lead to negative labelling of certain behaviours that are not socially acceptable.

3.2 Academic research

In the field of research, the competent use of Gen(AI) is essential to ensure integrity in research, including fair reporting of results, proper citation of sources, prevention of scientific fraud, and ensuring transparency and traceability of research work.

3.3 Administrative services

In the work of the administrative services, it is important to use only those inputs that are necessary for the performance of the tasks, without entering personal data or confidential information (e.g. project content, financial data) and to critically evaluate the results obtained when using the AI and GenAI.

4. Inclusiveness

The use of AI systems must be designed to allow for the equal involvement of all stakeholders. This is particularly important as some AI systems are pay-for-use, which can lead to various types of inequalities. It should also be considered that content-generating AI systems learn from data in which not all groups of people are equally represented, which can lead to bias in the results obtained. Particular attention should be paid to those people who may be excluded from using AI systems due to their circumstances, special needs or disabilities.

Recommendations

To ensure that stakeholders at UP utilise AI and GenAI tools in adherence to the established guidelines, these practices have to be actively implemented and maintained across all organisational tiers.

1. Education and training: all UP stakeholders should be provided with appropriate education and training for the competent and ethical use of (Gen)AI. This should include:
    a. higher education teachers and associates,
    b. students,
    c. researchers, and
    d. administrative staff.
2. Update of UP internal documents: all documents that define how to fulfil the conditions for the completion of studies (regulations, instructions, curricula course implementation plans, etc.) have to specify how to work with (Gen)AI to reduce the risk of inappropriate use or misuse. This includes, but is not limited to:
    a. Update of the guidelines for the preparation of seminars, bachelor's, master's and doctoral theses and other forms of texts or content at UP, its members, departments or programmes.
    b. Updating course syllabuses to make it unambiguously clear what is (dis)allowed use of (Gen)AI and what rules apply to the assessment of knowledge using AI.
    c. Updating regulations (e.g. the Regulations on Examination and Assessment at UP), updating the documents governing the issue of plagiarism and other documents related to these changes.
    d. Update of the UP Code of Ethics and related documents defining guidelines for ethical behaviour and practice.
3. Data protection: all personal and other sensitive data collected, processed or stored by UP stakeholders must be handled with care and follow the General Data Protection Regulation. Appropriate data handling policies should be put in place and procedures should be well defined for the secure and ethical use of data.
4. Process optimisation: it makes sense to optimise administrative processes through the use of AI systems, where the use of AI would contribute to positive effects (e.g. the use of chatbots to relieve the workload of professional services), and where proven tools, together with appropriate training, would ensure that it is used competently and ethically.

5. **Signing the Code of Ethics**: it is advisable to introduce the signing of a Code of Ethics at UP, whereby all UP stakeholders commit themselves to the ethical use of AI and Gen AI.
6. **Updating documents**: the guidelines and recommendations presented, as well as other documents related to the use of AI, should be periodically updated in line with technological developments and experience based on good practices.

Selected documents for further reading

Budhwar, P., Chowdhury, S., Wood, G., Aguinis, H., Bamber, G. J., Beltran, J. R., Boselie, P., Cooke, F. L., Decker, S., Knoblich, A. J., Malik, A., Paauwe, J. Papagiannidis, s., Patel, C., Pereira, V., Ren, S., Rogelberg, S., Sauders, M. N. K., Tung, R. L. and Varma, A. (2023). Human resource management in the age of generative artificial intelligence: Perspectives and research directions on ChatGPT. *Human Resource Management Journal, 33*(3), 606–659. https://doi.org/10.1111/1748-8583.12524

Council of Europe, European Court of Human Rights, European Data Protection Supervisor, European Union Agency for Fundamental Rights (2018). Handbook on European data protection law Handbook on European data protection law- Publications Office of the EU (europa.eu)

European Commission (2020). A European Strategy for data. https://digital-strategy.ec.europa.eu/en/policies/data

European Commission (2021). Regulatory framework proposal on artificial intelligence. Publications Office of the European Union. https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai

European Commission (2022). Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators. Publications Office of the European Union. https://data.europa.eu/doi/10.2766/153756

Kok, J. N., Boers, E. J. W., Kosters, W. A., Putten, P. van der in Poel, M. (2022). Artificial intelligence: definition, trends, techniques, and cases. V *Knowledge for sustainable development: an insight into the Encyclopedia of life support systems* (str. 1095–1107). Paris, London: UNESCO, EOLSS.

European Commission, Directorate-General for Communications Networks, Content and Technology (2019). Ethics guidelines for trustworthy AI. Publications Office of the European Union. https://data.europa.eu/doi/10.2759/346720

OECD (2021). Recommendation of the Council on Artificial Intelligence (Priporočilo Sveta o umetni inteligenci)
https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449

Stahl, B. C., Schroeder, D., & Rodrigues, R. (2023). Ethics of Artificial Intelligence: Case Studies and Options for Addressing Ethical Challenges. Springer Cham. https://doi.org/10.1007/978-3-031-17040-9
UNESCO (2019). Artificial Intelligence in Education: Challenges and Opportunities for Sustainable Development (Umetna inteligenca v izobraževanju: izzivi in priložnosti za trajnostni razvoj)
https://unesdoc.unesco.org/ark:/48223/pf0000366994

UNESCO (2021). Recommendation on the Ethics of Artificial Intelligence (Priporočilo o etiki umetne inteligence)
https://unesdoc.unesco.org/ark:/48223/pf0000381137.locale=en

UNESCO (2023). Chat GPT and Artificial Intelligence in higher education: Quick start guide. https://www.iesalc.unesco.org/wp-content/uploads/2023/04/ChatGPT-and-Artificial-Intelligence-in-higher-education-Quick-Start-guide_EN_FINAL.pdfhttps://www.iesalc.unesco.org/wp-content/uploads/2023/04/ChatGPT-and-Artificial-Intelligence-in-higher-education-Quick-Start-guide_EN_FINAL.pdf

UNESCO (2023). Guidance for generative AI in education and academic research. https://unesdoc.unesco.org/ark:/48223/pf0000386693