



UNIVERZITA
KARLOVA

Artificial intelligence (AI) Recommendations for the academic members of staff of Charles University

*Prepared by the working group for Distance Learning
Version 1 – June 2023*

ChatGPT is one of the tools of artificial intelligence (AI) that has raised concerns since become widely accessible in January 2023 in higher education and elsewhere due to possible misuse by students and researchers, in particular, cheating on academic papers and research results. Universities are mainly concerned about violation of the principles of academic integrity. AI tools present many challenges in terms of the new perspective on document results, which are seen as one of the main tools for verifying the quality of the work produced by students and researchers. These challenges need to be addressed, and the means to resolve them need to be found. The use of artificial intelligence tools cannot be prevented, but we need to develop approaches to cope with this new tool and to integrate it into teaching. ChatGPT should be viewed as another digitalization tool that can simplify a wide range of activities.

Contents

1. What is AI and what are the different types of AI?
2. How and for what purposes can AI be used?
3. What is appropriate when working with AI and what is not?
4. Ensuring cybersecurity when using AI
5. Academic integrity and the ethics of student and research work
6. Seminar and thesis work
7. How to correctly “cite” AI
8. Where can I learn more about AI?
9. Where can I learn to work with AI?
10. Who can I contact for problems relating to AI?

What is AI and what are the different types of AI?

Artificial intelligence (AI) includes applications, systems, and machines that are based on algorithms and computational models that simulate human thinking.

AI tools offer a wide range of digital resources according to the purpose of the potential use. It is up to each instructor which tools they use or recommend to students for different activities. Instructors also use **digital content generators** (whether it be texts, images, sound, or codes), **digital content editors**, **search engines**, or **translators**. In addition to the purpose of use, it is also important to evaluate the suitability of resources based on language location, complexity, and advancement of the user experience and to explicitly present to students arguments for or against working with a particular resource. Familiarize yourself with the [glossary of basic AI terms](#) and explore the [various applications](#) that can be used for instruction.

How and for what purposes can AI be used?

Use AI tools to improve instruction. AI should theoretically help you achieve your defined teaching goals more efficiently in the role of an assistant to instructors and an assistant to students. Adapt teaching methods and the assessment of students' academic performance to AI developments. In particular:

- Explicitly explain why you want or do not want students to use AI. This is the only way to convince students that this tool should be restricted in some cases;
- Where possible and useful, consider replacing written work with other forms of work;
- When evaluating students' written work, place more emphasis on monitoring the process of creating the work and presentation of their written work;
- Distinguish when it is appropriate to use AI for tasks and when it is not. Adapt the assignments accordingly.

Artificial intelligence (AI) learns from a large quantity of training data, including educational literature. This is why it is able to propose more or less sophisticated approaches for different educational situations and other activities of a university instructor. It can create didactic variations of task assignments or differentiated levels of difficulty, reformulate tasks according to requirements, propose evaluation criteria, suggest presentations for lectures, condense materials for students, and prepare sample sentences or tasks on a specific topic. It is an infinitely patient partner for developing and refining your ideas and can also take on the role of a test student.

What is appropriate when working with AI and what is not?

By using AI tools, you entrust their providers with a range of information that can be of a sensitive nature. Thus, be very careful when working with specific AI applications.

Demonstrating the unacknowledged use of AI tools is very problematic. It is not and will not be possible to clearly prove that students have used AI in an unethical manner. Tools that promise otherwise are not trustworthy and may only indicate that an AI tool was used, but it will not confirm it. **Hence, it is better to prevent such situations.**

- Approach students in a way that they are not afraid to make mistakes, monitor their progress, and provide support in learning academic skills.
- Create an environment of mutual trust. Avoid suspicion and accusations.
- Set appropriate learning goals.
- Have learning outcomes defined.
- Provide students with continuous feedback.
- Use tasks and assignments of various difficulty and approach assessment in the same way.
- Eliminate student stress relating to time pressure. Set realistic timeframes for completing tasks, assign written tasks as early as possible, and regularly monitor whether students are working on the task, understanding the assignment, and can resolve the tasks without too much difficulty. Divide written tasks (e.g. seminar work) into logical units (research, outlines, theoretical parts, practical parts).
- Build a positive relationship with your students. Base your authority on your expertise and insight, not on fear and unattainable demands.
- **When assigning work, establish in advance the conditions for students to use automated tools, especially AI, but also autocorrections, translators, citation generators, etc.**

Ensuring cybersecurity when using AI

The increased usage, availability, and popularity of AI tools, such as ChatGPT, Dall-E, Bard, etc., has stimulated great interest and has created many opportunities for academic utilization. In addition to these opportunities, AI also presents significant cyber threats and risks that need to be considered when using these AI tools.

Among the major risks is the sharing of sensitive information, including personal data, which must not leave the CU environment and should not be publicly accessible.

These guidelines apply to all Large Language Models (LLMs) and AI chatbots, including ChatGPT, GPT-n/x, Bard, LLaMa, BLOOM, etc.

Users should be aware that all queries/challenges posed in an AI tool are visible to the tool operators outside of CU.

Employees should be familiar with and adhere to basic rules when using AI tools, and thus from a cybersecurity standpoint, the following guidelines should be followed:

- Do not use the same passwords for registration and logging in as you use for CU services and systems;
- Pay attention to password requirements, such as a password length of 12 characters and the following criteria:
 - One uppercase letter (AKZSD),
 - One lowercase letter (bsdijsd),
 - One number (7291), and
 - One special character (":", ",", "@", "#", "%", "!", "\$", "&", "+", "-", etc.),
- Do not store your login data in a web browser;
- Use two-factor authentication whenever possible;
- Do not provide in an AI tool confidential, internal, protected, or sensitive information, personal data, and other non-public information that should not be disclosed to unauthorized individuals;
- Do not provide AI tools with information that includes the university's intellectual property;
- User data cannot be used for training AI models unless users explicitly consent to such use and the use of data for machine learning/AI purposes is in line with university principles.

Academic integrity and the ethics of student and research work

The public accessibility of AI technologies does not change the fundamental principles of research work. Research should continue to be transparent in its methodology and ethical in its execution and should strive to maximize reproducibility.

Introduce students to the basic principles of academic integrity, not only in the context of using AI tools. Be a good example for students when using AI. Show them ethical ways to use AI. Make it clear to students that you value their (self)development and the authentic results of their own work. Train them in the skills of academic writing. Clearly acknowledge the personal contributions of individual students. Explain to students that AI is a tool that is always utilized by a specific person, and that this person bears responsibility for how they use it to achieve their goals.

Keep in mind that AI tools and the possibilities they offer can deepen socio-economic disparities among students, such as the differences between paid and unpaid versions of a system.

In discussions about AI with colleagues and students, advocate for a responsible approach to utilizing AI. A responsible approach to AI in the context of teaching at a university also involves re-evaluating the goals of education and the expected learning outcomes in study programmes and courses, so that graduates can thrive in a world that will be even more significantly influenced by AI in the future.

- 1) Clearly formulate the conditions under which you consider the use of AI tools by students to be appropriate for studying, homework, or during the creation of written assignments.
- 2) Provide students with opportunities to develop skills through the use of AI tools by assigning specific tasks.
- 3) Guide students in acquiring competencies that will be increasingly important for their future careers.

- 4) If you decide not to recommend or to prohibit the use of AI tools, clarify your decision to students (explain the benefits of your decision).
- 5) On the other hand, if you actively use AI in preparing and implementing instruction at the university, inform students about it so that they can be inspired by your experiences.
- 6) Do not be afraid of losing authority, and take advantage of intergenerational learning within the entire academic community, fostering collaboration between instructors and students.

We recommend setting learning outcomes for each course that answer the following question: what should students be able to do at the end of the course? Learning outcomes are based on Bloom's taxonomy and define the desired knowledge and skills that students should be able to demonstrate at various levels. Learning outcomes derived from the lower levels of Bloom's taxonomy (remembering, understanding, ...) may be more easily replaced or "accomplished" by the power of AI tools. Hence, we recommend focusing on higher levels and reevaluating the learning outcomes and instructional goals. You can find a manual on learning outcomes and Bloom's taxonomy here: <https://dlcv.cuni.cz/course/view.php?id=710>, key: "learningoutcomes".

Seminar and thesis work

With seminar work, the options for preventing the use of AI tools are limited. A key element is verification by the instructor regarding the use of sources and literature, verification of the writing process, and the methodology. As for theses, supervisors and advisors play a crucial role. They should continuously verify the student's work and the chosen approaches, and assess the student's knowledge and skills during consultations. Incorporate research strategy methods into your teaching to facilitate the search for high-quality primary information sources. Collaborate with your library to teach students how to search for and identify optimal document types and their citation for their work, both in theory and practice. Prepare students for the fact that even small-scale research generates research data that need to be properly maintained in order to document the research work. Do not hesitate to involve an expert in research data management in your instruction.

If there are any doubts regarding authorship for seminar work or theses, we recommend the following:

- Verify the references/sources that the student cites in their work. This involves cross-referencing the bibliography with the in-text citations to ensure they match. If online sources are used, verify that they actually refer to existing articles or publications.
- If a student uses printed monographs or articles and cites them without online links, verify the existence and accessibility of these sources.
- If a book is not available in print form in any Czech library, it raises questions about how the student obtained access to it. This can be addressed as a query during the defence, or if the thesis has not yet been submitted, the supervisor can ask the student.
- Citations from monographs should include specific page numbers where the information is sourced. It is recommended to verify whether these page numbers exist in the book and that they indeed contain the specific information cited. The student can be asked to provide evidence for such citations.

In addition, the student can be encouraged to provide a more detailed description of the methodology used in writing the work, including the phase of researching primary information sources. It is up to the supervisor and the reviewer of the work to decide whether the use of AI for stylistic editing of the text, if acknowledged, is acceptable. However, we are in favour of accepting this, since the use of AI in writing can be expected more frequently.

We recommend that students include a list of all the tools used in the methodological introduction of the work (e.g. translators, graphic systems, research tools, proofreading tools), including AI and specifying the product used. The work can also include an evaluation of working with this tool and its relevance from the student's perspective.

If a student's thesis includes a section of their own research and there are doubts about the validity of the results (e.g. a survey), the student can be asked to provide evidence of how the research was conducted (such as the sample group, the specific subject matter, the methodology used, and the relevant conclusions drawn). One way to provide such evidence could be through information about the research shared by the student with those involved in the research.

If you discover that a student has used AI contrary to the guidelines, this is grounds for initiating disciplinary proceedings. Continue as you would in the event of any other disciplinary offences.

How to correctly "cite" AI

- An AI tool is never the author of the information it presents; authorship is reserved for physical individuals or groups of individuals (known as corporate authorship).
- An AI tool cannot be regarded as a physical person who conveyed information "verbally".
- If a student cites "verbal communication" from specific individuals in their work, such communication must be preserved by the student (e.g. through recordings, authorized transcripts of interviews, email correspondence), and such evidence of verbal communication must be handled in accordance with legal regulations (particularly copyright law and personal data protection). If there are doubts about the accuracy of a citation through verbal communication or doubts about the conformity between the text of the work and the cited verbal communication, it is the responsibility of the student to dispel these doubts and defend their approach.
- Recommend how students should declare the use of AI tools in their work using guidelines (e.g. those provided by Elsevier publishing) see <https://www.elsevier.com/about/policies/publishing-ethics>.
- Emphasize to students the need to cite primary information sources as sources of verified and repeatedly verifiable information.

Where can I learn more about AI?

The organization prg.ai and Charles University have established a group that will prepare Czech education for the inevitable changes relating to the advances in artificial intelligence. The purpose of the group is to find answers to the challenges associated with the expansion of AI, particularly with regards to large language models (including the widely discussed tool ChatGPT). The group consists of representatives from Charles University, Masaryk University, the Czech Technical University, the University of West Bohemia in Pilsen, Jan Evangelista Purkyně University in Ústí nad Labem, Palacký University in Olomouc, the National Pedagogical Institute, the Smíchov Secondary Technical School, AI Dětem, 42 Prague, and other institutions. **All documents of the working group can be found on the group's web pages:**

A statement by the university management on the use of AI can be found [here](#).

External links:

- <https://prg.ai/>
- <https://aidetem.cz/obecny-uvod-do-umele-inteligence/>
- <https://aidetem.cz/metodiky/>
- <https://iaied.org/journal>
- <https://ieeexplore.ieee.org/abstract/document/9069875>

- <https://discovery.ucl.ac.uk/id/eprint/10168357/>
- <https://link.springer.com/article/10.1007/s40593-016-0110-3>
- For interested persons, there is also a **discussion forum by the Association of Libraries of Czech Universities** “How to cite artificial intelligence” <https://www.akvs.cz/akce/akce-2023/citace-ai>

Where can I learn to work with AI?

- A free online course “Elements of AI” – <https://www.elementsofai.cz/>
- The lecture cycle AI in context – <https://ufal.mff.cuni.cz/AlvK/>
- Inspiration for work with AI tools: <https://aireaktor.ujep.cz/category/clanky/>
- Life-long learning courses at CU – Go to the Educational Portal <https://cczv.cuni.cz/CCZV-203.html>
Course for academic members of staff and support employees of the Rectorate and faculties
- Courses by Centre for the Support of E-learning <https://dl.cuni.cz/skoleni/>

Who can I contact for problems relating to AI?

At the university level:

- Mgr. David Hurný, Member of the Rector’s Board david.hurny@ruk.cuni.cz
- Centre for the Support of E-learning elarning@cuni.cz
- Faculty E-learning Coordinator – see <https://dl.cuni.cz/podpora>
- Central Library ukn@cuni.cz
- Centre for Open Science – work with research data openscience@cuni.cz