AI Guide

for Researchers at TU Graz

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Artificial intelligence is rapidly transforming the way research is conducted, from literature searches to automated experiments. Scientists use AI in all disciplines to solve complex scientific problems and accelerate research: for example, in 2024, the Nobel Prize in Chemistry was awarded to researchers David Baker, Demis Hassabis and John Jumper for the development of *AlphaFold*[1] – a method that is now used by more than two million scientists.

A recent report by the JRC, *The Role of Artificial Intelligence in Scientific Research*, part of the EU's latest "AI Apply" or "AI for Science" strategy, lists in detail – from scientific questioning to literature searches, hypothesis generation, experiments, data analysis, publications, etc. – where AI can be useful in the scientific process (but also where the problems lie).

In order to remain competitive in research at TU Graz, it is therefore important that researchers make use of these new opportunities in their research process. TU Graz researchers are explicitly encouraged to integrate AI into their research processes. As the field is changing so rapidly, this guideline is designed as a "living document" and is intended to outline principles for the use of AI applications rather than provide a list of specific tools. The guideline also serves to reflect the wide range of AI tools and training courses available at TU Graz.

[1] AlphaFold is an AI system developed by DeepMind (Google) that can predict the three-dimensional structure of proteins based solely on their amino acid sequence. This has solved a decades-old problem in biology: protein structure prediction.

1. Basic principles for the use of AI

TU Graz embraces the opportunities offered by artificial intelligence and is aware of the risks. The basic principles for the safe use of AI-based applications are summarised hereafter as the **AI-TU rule**:

A Analyse the data!

Check whether the data entered is **personal** or **confidential**.

- Check for "personal": Is any of this personal data or data of third parties that is not already public and is being used without consent?
- Check for "confidential": Would it be a problem if this data were freely available on the internet, or does it include confidential or trade-secret material?

I Interpret the results critically!

Never use AI-generated results as your sole source of information, especially for decisions that may have legal, medical or financial implications. You (and not the AI) are responsible for the use of the results.

T Truth-check the results!

Before reusing the information generated by AI, verify that it is accurate. Only you, for example as the author of a text, can take responsibility and critically review AI-generated results. AI applications are prone to bias, to producing false information ("hallucinations") and to other errors[2].

U Use the results responsibly!

Before using AI-generated results, check the intended use. If the output generated by AI is for your own use only and will not be shared, you may use it. If the output will be shared, additional steps/measures may be required. You are obliged to indicate the use of AI if you have not revised or reworded the results accordingly.

[2] AI tools are often trained using large amounts of unmoderated text, such as texts published on the internet, which can lead to the creation of biased content. Avoiding such biased content is still under development. In this context, "hallucinating" means that AI can invent something or output false information. Examples include quotations from non-existent publications or sources, or references that distort the truth.

2. Entering personal data

When personal data is fed into an AI system, the provisions of the General Data Protection Regulation (GDPR) must be complied with. Among other things, this means that for each processing operation there must be a specified, legitimate purpose as well as one of the legal bases of Art. 6 (1) GDPR[3]. Such a legal basis could be, for example, the consent of the individual whose data is used, or the public interest. In a research context, processing of personal data is enabled in connection with the Research Organisation Act (FOG) or the Data Protection Act (DSG).

When processing personal data, first consider the possibility of anonymising the information. If this is not possible, only pseudonymised data (= replacement with fictitious data) may be used. The principle of data minimisation applies: use only data that is absolutely necessary.[4]

3. Entering confidential and/or copyright-protected data

When entering data, information, codes or documents (hereinafter "data") in the course of using AI applications, users rarely have the option of deciding who should have access to the data entered. For example, the laws of some countries allow their respective governments to access the servers of companies based in their country. The owners of an AI application often reserve the right in the terms of use to use the data entered for the further training of the AI application – which means that suppliers may also have access to this data.

To check whether the data constitutes confidential information[5] or contains a trade secret, ask yourself the follow question: Would it be a problem if this data were freely available on the internet? If so, then it is confidential information that must not be used and a thorough review is required.[6]
If the data constitutes a trade secret, entering it into an AI application constitutes a breach of that secret. Entering third-party data without their consent constitutes a breach of confidentiality and secrecy obligations.

The following list shows specific examples of data that may be entered (i) securely, (ii) only to a limited extent or (iii) not at all when using AI.

[3] See Art. 6 GDPR – Rechtmäßigkeit der Verarbeitung
[4] See also the data protection information sheet for employees.
[5] Definition of data/information: Information refers to data that is placed in context.
[6] Caution is advised in the case of corporate collaborations: here, it is often precisely regulated in contracts which information is considered confidential.

	Safe to use	To be checked on a case-by-case basis	Must never be entered
Text information	Information that has already been published or is publishable; publication in progress[7]		Trade secrets, ideas for new technologies or projects, confidential information
Personal data	Own data or consent to use received		
Third-party data	Data from third parties that is already public, or consent to use has been given	Public but personal data from third parties for which no consent for use has been obtained	Protected by a confidentiality agreement/NDA
Software, codes, algorithms, data sets	Software/code that has already been published or is publishable		Trade secrets, confidential software/code
Inventions	Patented inventions or submitted for registration with the patent office		Inventions in preparation for submission to a patent office

4. Use of AI-generated results

The following principle always applies: Every result must be checked for correct content. AI applications can provide false information (hallucinations) and/or distorted information (bias). If AI-generated results are only used for internal purposes – as is often the case, for example, in the preparation of evaluations, concepts or scientific studies – the use of the results is allowed in any case.
However, if the results from the use of AI applications will be shared externally, further steps may be required. When publishing scientific articles, projects, studies, reports or similar outputs, you must disclose the use of AI if you reproduce AI-generated content verbatim or with only minor edits.

AI can be a useful aid in formulating funding applications, especially for drafting general sections of text. However, caution is advised: the idea or technology itself should never be disclosed. Funding bodies such as the Österreichische Forschungsförderungsgesellschaft FFG often have their own rules for using AI in funding applications.[8]

When embedding results in internal applications, it must be ensured that the output does not become confidential information as a result of its intended internal use. This may be the case, for example, when used for security applications: for example, the creation of a password using AI may be allowed, whereas the internal use of the password may be prohibited (as it is known to the software operators). When creating applications (software, code, etc.), it must be checked whether an open-source check is available in the application (in this case, a technical check must be carried out to ensure that the code does not contain any malware) and whether it must be disclosed that the application was created using an external tool[9] .
If the results from the use of AI applications contain data from inventions or patents (or even parts thereof), it is mandatory to check whether these may be used at all (see table above). If these are internal inventions and patents of TU Graz, the Research & Technology House must

[7] "Publishable" means that although the information has not been published, it can be published without any risk or harm to TU Graz. "Publication in progress" means that the "go-ahead" for publication has already been given, but publication has not yet taken place – which may be the case with peer reviews, for example.
[8] See, for example, the FFG's position on the use of generative AI.
[9] See also the information security policy of TU Graz.

be consulted before use. If the results are to be exploited, all data sets used and the necessary usage rights must be documented. If there are any uncertainties or if exploitation is planned, it is advisable to contact the Research & Technology House.

5. Who owns the results of using AI?

When using AI-generated results – texts, images, software, etc. – it is currently still unclear who legally owns them (e.g. the user or the AI provider). In most jurisdictions**,** the results are in the public domain**,** as in most countries only human authors can acquire rights. However, this does not apply without restriction, as copyright is regulated on a territorial basis and different provisions apply depending on the country. In some countries, for example, the input provider is recognised as the owner, and in some (few) countries even the AI itself.

6. Obligation to disclose

Be transparent about the use of AI. Researchers and lecturers at TU Graz are obliged to disclose the use of tools, including AI applications[10]. If output is used without adapting it with one's own knowledge, the citation requirement applies and the AI-tool used must be specified[11].

7. AI at TU Graz

TU Graz is intensively engaged with the topic of AI in all areas. This guideline is specifically aimed at researchers, but is intended to give all TU Graz employees a deeper insight into the use of AI tools and, at the same time, provide them with greater confidence in using them.

The following appendix provides an overview of AI activities at TU Graz, as well as links to training materials, services and further education opportunities. From 2026, researchers at TU Graz will also have the opportunity to attend external training courses on specific AI topics in research, which will be offered twice a year. Registration will be possible via the Human Resource Development department of TU Graz.

[10] See also the EU Regulation laying down harmonised rules for AI
[11] See also the Leitlinie für den Einsatz von Künstlicher Intelligenz (KI)-gestützten Tools im Bereich der Lehre (Guideline on the use of AI-supported tools in teaching).

Appendix

Overview of AI at TU Graz

1. Digitalisation and IT strategy. The position paper sets out TU Graz's strategic goals for digitalisation, which explicitly includes the use of AI throughout the entire research process. Other goals relate to society (third mission/outreach), supporting teaching, strengthening competitiveness, optimising administrative processes and promoting digital skills.

2. Research at TU Graz. Artificial Intelligence is an integral part of almost all research activities at TU Graz and, at the same time, an independent field of research. Strategically, the main areas of research in the field of AI are reflected both in the broad Fields of Expertise (FoEs) – such as the FoE Information, Communication & Computing – and in the specialised Research Centres (RCs), such as the RC GraML (Graz Centre for Machine Learning), as well as in the COMET competence centres, such as the Know-Center or Pro^2 Future ("Products and Production Systems of the Future"). Research on AI at TU Graz ranges from basic research – TU Graz is a partner in the Cluster of Excellence "Bilateral AI", for example – to application-oriented research within the framework of highly competitive national and European programmes, to innovative, specialised start-ups emerging from this environment.

3. AcademicAI . Since the end of 2025, TU Graz employees have been able to use AcademicAI not only to use a chatbot (OpenAI), but also to analyse documents and create their own knowledge database for their field of expertise. Data protection is a top priority.

4. Guideline for the use of AI-supported tools in teaching. The guideline serves as a guide for the responsible and transparent use of AI in teaching at TU Graz and is aimed at both teachers and students. In principle, students may always use AI for spelling, translation and stylistic improvements to their own texts; any further use is determined individually by the teachers. AI tools are considered unauthorised aids in examinations (unless expressly permitted), and any use must be indicated.

5. Advanced studies in Artificial Intelligence Engineering. The degree programme, which was successfully launched at TU Graz in autumn 2025, provides students with in-depth skills in the development and application of AI.

6. MUSICA & High-Performance Computing at ASC. The Multi-Site Computer Austria MUSICA computer system provides an experimental open-source environment for training specific AI models and developing innovative, AI-based services for teaching, research and administration . The project is part of the current performance agreement[12] and is coordinated by ASC (Austrian Scientific Computing), which provides high-performance computing infrastructure to researchers at TU Graz as part of a cooperation agreement.

[12] See project B2.2.4 of the current 2025-2027 Leistungsvereinbarung with the Federal Ministry of Education, Science and Research (BMFWF).

Training materials, services and continuing education offerings on AI topics

- AI in Literature Search. A brief introduction to AI in literature search, provided by the TU Graz library.
- Die wichtigsten KI Tools (Röthler, 2025). The training document (in German language) provides a comprehensive overview of the most important AI tools for research.
- Digitalkompetenz. The platform on the TU4U intranet, which is managed by the Human Resource Development department, offers a variety of resources for self-study – from e-learning courses to videos, podcasts, articles and programming tutorials.
- DMP Tool. The DMP Tool from TU Graz helps researchers create data management plans.
- Future Skills: Fit for New Work. In the Future Skills series[13], training courses on AI topics are offered by the Human Resource Development department.
- iMooX. The platform operated by TU Graz offers a wide range of openly accessible online courses (Massive Open Online Courses, MOOCs), including an increasing number on AI topics – for example, Generative AI: Understanding, Designing, Taking Responsibility, and AI in Higher Education. But How?
- In-house Training, Human Resource Development, Teaching Academy, Teaching and Learning Technologies. These TU Graz departments offer ongoing training on AI topics, which are communicated via the TU4U intranet and other information channels.
- KI in der Projektarbeit (Röthler, 2025). This training document introduces AI tools for researchers that can be used for funding applications, consistency checks and project communication (in German).
- Life Long Learning. As part of its continuing professional development programme, the LLL department offers ongoing skills development programmes related to AI – currently including courses such as AI Essentials: Fundamentals and Practice of AI and Generative AI, Developing and Evaluating AI Use Cases, and Low and No-Code Machine Learning with KNIME, as well as the MBA programmes Digital Leadership – Green Microelectronics and Leadership in Digital Transformation.
- prompting.schule. At the prompting.schule, TU Graz staff and students can learn strategies for more effective prompting – for example, how to write more targeted instructions to achieve better results from the use of AI applications.
- RDM - Data Stewards. Trained specialists ("data stewards") from Research Data Management at TU Graz offer support and advice on research data management.
- Search Smarter: AI as a Research Assistant. This blog post informs researchers about suitable tools for literature research.
- TELucation. The support platform contains collections of materials on AI in teaching: video tutorials, didactic concepts, best practices – and a series of podcasts on AI in teaching.
- TU Graz Repository. The TU Graz Repository is used for the secure storage, management and accessibility of research results and is available to all TU Graz employees.

[13] "Future skills" refers to a bundle of future-oriented competencies, such as learning ability, innovation ability and digital skills.

Internal references/links

- Artificial Intelligence in teaching – TU Graz
- Data protection information sheet for employees of TU Graz
- Digitalisation at TU Graz
- Ethics compass of TU Graz
- Guideline on the use of AI-supported tools in teaching
- Information Security Guideline of TU Graz
- RDM – Home & RDM Tools
- Research & Technology House at TU Graz
- Statutes on Scientific and Artistic Integrity

Sources and further links

- ASC Austrian Scientific Computing
- Austrian Research Promotion Agency FFG. "FFG position on the use of generative AI"
- DUH – The Digital University Hub
- EU Regulation laying down harmonised rules for artificial intelligence
- European Commission – EUR-Lex "A European Strategy for Artificial Intelligence in Science"
- European Commission – Press Corner: "AI Continent Action Plan"
- European Commission – Press Corner: "Resource for AI Science in Europe"
- GDPR – Art. 6 Lawfulness of processing
- ISC-University of Pennsylvania "Statement on Guidance for the University of Pennsylvania Community on Use of Generative Artificial Intelligence"
- JRC Publications Repository "The Role of Artificial Intelligence in Scientific Research"