

Policy on the Use of Artificial Intelligence in Education

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Use of AI (LLMs) is permitted *unless specifically prohibited*.

Large Language Models (LLMs) represent a groundbreaking advancement in natural language processing and natural language understanding. They have enormous potential to improve productivity, but you must use them in an ethical manner in this course.

You are here to develop your skills and knowledge. Relying too heavily on LLMs can hinder critical thinking and problem-solving skills. It's important that you use them as a tool (a co-pilot) rather than a replacement for your own analysis and creativity.

Basically, use LLMs to learn about a subject, obtain feedback on ideas/work, prototyping and code generation, and improving the quality of english in reports. **If used, cite the LLM/system used, and reflect on their use (e.g. accuracy, bias, relevance) in your assignments / project.**

Inappropriate use will be referred to the board of examiners; consequences range from getting a zero on a course component, to failing the course, to expulsion from the university.

Capabilities of Large Language Models

1. **Vast Knowledge Base:** LLMs are trained on extensive datasets, encompassing a wide range of topics. This enables them to provide information and generate content on a multitude of subjects.
2. **Language Understanding and Generation:** They are adept at understanding and generating human-like text, making them useful for tasks like summarizing information, answering questions, and creating content.
3. **Multilingual Support:** Many LLMs can understand and respond in multiple languages, making them valuable for language studies and translation tasks.
4. **Pattern Recognition:** They are excellent at identifying patterns in data, which can be beneficial in analyzing trends, making predictions, or finding correlations in research.
5. **Assistance in Creative Processes:** LLMs can assist in creative writing, idea generation, and brainstorming, providing new perspectives or suggestions that can spark creativity.
6. **Programming Help:** They can assist in coding by suggesting code snippets, debugging, or explaining programming concepts.

Limitations of Large Language Models

- **Lack of Understanding:** LLMs do not understand content in the way humans do. They generate responses based on patterns in data rather than true comprehension.
- **Inaccuracies and Factual Errors:** LLMs can generate plausible-sounding but inaccurate or false information. They don't have the ability to fact-check or verify the accuracy of their outputs.
- **Contextual Misunderstandings:** They sometimes struggle with understanding and maintaining context, especially in complex or nuanced discussions.
- **Dynamic Knowledge Limitation:** LLMs are not updated in real-time. Their knowledge is limited to the data available up to the point of their last training, making them less useful for current events or very recent developments.
- **Bias in Data:** LLMs can perpetuate biases present in their training data. This can lead to skewed, unfair, or offensive outputs and requires careful examination of their responses.
- **Limited Creativity:** Their outputs, while sometimes novel, are fundamentally derivations of existing data. True creativity or out-of-the-box thinking is beyond their capability.
- **No Moral or Ethical Judgment:** LLMs lack the ability to make moral or ethical judgments. They may inadvertently generate harmful, biased, or inappropriate content if not properly guided.

Inappropriate use of large language models

1. Plagiarism and Misrepresentation

- **Submitting AI-Generated Work as Original:** Using a language model to complete an assignment and submitting it as entirely one's own work without disclosure.
- **Lack of Attribution:** Not crediting the use of a language model when it has significantly contributed to the creation of the content.

1. Bypassing Learning Objectives

- **Avoiding Skill Development:** Relying on language models to perform tasks that are meant to develop specific skills, such as critical thinking, research, writing, or problem-solving.
- **Circumventing Course Requirements:** Using a language model to complete tasks that are designed to assess the student's understanding or mastery of the subject matter.

1. Unethical or Harmful Content Generation

- **Creating Inappropriate Content:** Using language models to generate offensive, discriminatory, or harmful content.
- **Spreading Misinformation:** Utilizing language models to produce or disseminate false or misleading information.

Inappropriate use of large language models

4. Privacy Violations and Sensitive Data

- **Inputting Sensitive Information:** Entering personal or sensitive data into a (remote) language model, which could potentially breach privacy or data protection policies.
- **Compromising Confidentiality:** Using language models in a way that could disclose confidential or proprietary information.

5. Disregarding Intellectual Property

- **Infringing Copyright:** Using a language model to replicate or slightly modify existing copyrighted works without proper attribution or violating fair use principles.

6. Manipulation and Dishonesty

- **Misleading Peer Review or Feedback:** Employing a language model to give the impression of peer engagement or fabricating peer reviews.
- **Deceptive Communications:** Using a language model to write emails or messages to instructors or peers under false pretenses.

Inappropriate use of large language models

7. Over-reliance and Lack of Engagement

- **Over-dependence:** Relying excessively on language models for completing assignments, leading to a lack of engagement with the learning material and educational process.

8. Violating Institutional Policies

- **Contravening Specific Guidelines:** Using language models in ways that are explicitly prohibited by Maastricht University policies for technology use.

Disclosure

This guide was prepared using OpenAI's ChatGPT 4.0 (accessed on by subscription). Specifically, the LLM was used to generate a response to the following questions:

- Help me prepare an student ethics guide for the use of large language models in a masters level course.
- Elaborate on the purpose of the guide.
- Elaborate on the capabilities and limitations of large language models
- Elaborate on what would constitute inappropriate use of large language models for course assignments.
- What are possible consequences of misuse ?

The answers to these questions were transcribed verbatim with minimal editorial changes (rephrasing, reordering of points, removal of less relevant points).



You

I've prepared a guide for my students in the ethical use of large language models in my course. Could you provide me with critical feedback on the guidance?



ChatGPT

Of course, I'd be happy to help review your guidance on the ethical use of large language models in your course. Please share the main points or the full text of your guide, and I'll provide you with feedback on its content, structure, and any areas that could benefit from further clarification or enhancement.



ChatGPT

Your guide on the ethical use of large language models (LLMs) in your course is comprehensive and well-structured, covering essential aspects of responsible AI use, its capabilities, limitations, and highlighting potential areas of inappropriate application. Here are some points of critical feedback to further refine your guidance:

Strengths:

1. **Clear Permission with Ethical Boundaries:** Your guide starts positively by permitting the use of LLMs unless specifically prohibited, setting a tone that encourages exploration while emphasizing ethical use.
2. **Balanced View on Capabilities and Limitations:** You provide a balanced overview of what LLMs can do and their limitations, which is crucial for setting realistic expectations.
3. **Emphasis on Skill Development:** The guide rightly emphasizes using LLMs as a tool to aid learning, not replace it, highlighting the importance of developing personal skills and knowledge.
4. **Specific Examples of Inappropriate Use:** You've detailed various forms of misuse, from plagiarism to privacy violations, offering clear examples of what is considered unethical.

Areas for Enhancement:

1. **Guidance on Attribution:** While you mention the need for attribution when LLMs significantly contribute to work, offering specific examples or templates for citing AI-generated content could provide clearer guidance for students.
2. **Handling of Biases and Inaccuracies:** Given the mention of biases and inaccuracies in LLM outputs, it could be beneficial to provide strategies or steps students should take to critically evaluate and mitigate these issues in their work.
3. **Encouraging Critical Engagement with AI Outputs:** Encourage students to not only reflect on their use of LLMs in assignments/projects but also to critically engage with the content generated by LLMs, questioning its accuracy, bias, and relevance.
4. **Update and Review Process:** LLMs evolve rapidly, so mentioning a periodic review and update of this guide could ensure it remains relevant and aligned with the latest



Maastricht University

Institute of Data Science

Reflection

I used ChatGPT 4.0 to develop the guidance in an interactive manner. Starting with a high level question pertaining to the purpose of the guide, I systematically delved into more specific aspects of the use of LLMs in an educational setting. In using ChatGPT as a co-pilot, I gained access to a more comprehensive set of issues to raise in relation to the utility of language models, their limitations, and where it is inappropriate to use them. I found the answers to be accurate and sufficiently broad with respect to my questions. With careful editorial review of the generated response, I crafted a guidance that clearly sets out my ethical expectations in this course. I do hope that students are inspired by this and take the opportunity to share their use of AI models throughout the course, except where explicitly contraindicated.