Methods Course

AI-based Tools for Scientific Writing

Dr. Daniel Mertens
www.scientistsneedmore.de

25 + 26 January 2024
09.00 – 17.00 hrs.

Objectives

AI-based tools have the potential to revolutionize scientific writing and enable researchers to work more efficiently and effectively. However, it is essential for researchers to use these tools judiciously and with an understanding of their limitations. Examples of very useful tools are AI-powered literature searches and analyses that substantially help identify relevant articles and assess their quality. Similarly, AI-based tools support brainstorming, identifying interesting research questions and finally producing easy-to-read text e.g., for cover letters, visibility and improved scientific texting.

The following topics will be covered

1. Introduction to AI in scientific writing: basics of AI, how it works, and how it can be applied to scientific writing.

2. Brainstorming: For natural sciences, AI tools are very powerful support for generating connections between research ideas and outlining possible content of scientific communication like manuscripts and grant applications based on the science of the researcher.

3. Literature search and quality assessment: techniques for conducting a literature review, including searching and evaluation of the quality and relevance of the literature and connectivity between publications and authors.

4. AI-powered writing tools: This section will cover specific AI-powered writing tools that can aid in scientific writing, i.e. language models for automated summarisation, paraphrasing, and text generation and optimisation.

5. Promoting research: AI tools for supplying and enhancing e.g., press releases, social media output and websites.

6. Ethical considerations: This section will cover ethical considerations related to the use of AI in scientific writing such as issues related to plagiarism, data privacy, and bias.

(see page 3 for detailed programme)

Methods and Course Structure

Throughout the course, we will use case studies and hands-on exercises to help participants apply the concepts and tools to their scientific research communication.

The course has a modular structure, so you can choose which topics you are interested in (in case you don't want to participate in the entire course).

Please note that if you choose to participate in single modules instead of the entire course, the content of the other modules cannot be repeated for you.

Target Group

MARUM (incl. GLOMAR) members who are interested in the topic

Venue

MARUM, University of Bremen, Leobener Str. 8, 28359 Bremen, Germany
MARUM I (main) building, room 2070

Registration

Even though this course has a hop-on-hop-off structure, we need to be able to plan the resources (room size/no. of participants, drinks and cookies etc.). We therefore kindly ask you to register if you would like to attend:

To register for this course, please visit the course web page:
https://www.marum.de/en/education-career/professional-development/2024/2024-01-25.html

Please note that your registration will be binding.

The registration deadline for this course is **18 January 2024**.

Any enquiries regarding this event can be addressed to early-career@marum.de.

Detailed Programme

Day 1, 25 January 2023 - Introduction to AI-based tools

09.00 - 10.30	M1: Introduction to GPTs and how to use them (prompt engineering)
10.30 - 11.00	*Coffee break*
11.00 - 12.30	M2: AI tools make literature research more effective and more objective
12.30 - 13.30	*Lunch break*
13.30 - 15.00	M3: AI-assisted writing: message, structure and text
15.00 - 15.30	*Coffee break*
15.30 - 17.00	M4: Good scientific practice and outreach in the era of AI, next developments of AI

Day 2, 26 January 2023 - Application of AI-based tools in science writing

09.00 - 10.30	M5: The Big Five and identifying the message: Who and why?
10.30 - 11.00	*Coffee break*
11.00 - 12.30	M6: Storytelling and pitching: How to tell a scientific story
12.30 - 13.30	Lunch break
13.30 - 15.00	M7: How to project manage your scientific writing: The professional approach
15.00 - 15.30	*Coffee break*
15.30 - 17.00	M8: How to turn data into intuitive figures: Titles and (graphical) abstracts