



Title: Artificial intelligence at our doorstep

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Introduction

Artificial intelligence (AI) has moved from a niche curiosity to a practical tool in just a few years, transforming the way we work. Merely three years ago, it was mainly explored by tech enthusiasts or by schoolchildren looking for ways to accelerate their homework. However, over the past two years, new AI-based applications emerged and improved at a remarkable pace. For companies, keeping up with this rapidly evolving landscape of AI innovations is a real challenge.

As a small company serving a diverse range of clients, each with unique needs and stylistic expectations, it isn't practical for us to invest in highly customized AI tools. Instead, we need to rely on publicly available solutions that offer flexibility and broad applicability across projects.

The AI tools we use to support our medical writing activities fall into three main categories: chat-based search engines, research and note-taking tools, and meeting agents.

Chat-based search engines

Chat-based tools, or chatbots, like ChatGPT, Perplexity, and Gemini can enhance efficiency in medical writing by supporting tasks such as text formatting, editing, and summarizing, data synthesis and document organization, repurposing content for different audiences, and creative brainstorming. The recently launched deep research features in Gemini and Perplexity can generate detailed topic reports, potentially saving hours of literature searching.

However, it is crucial to remain aware that outputs are only as reliable as the source data, which may be biased, incomplete, or even factually incorrect. Additionally, chatbots may struggle to

distinguish high-quality sources from outdated or low-credibility information. As a result, verifying the accuracy of any AI-generated medical or scientific statements, and the interpretations based on them, remains essential. Careful prompting, for example focusing on peer-reviewed publications within a defined timeframe, can help mitigate some of these risks.

Privacy and data security are other important concerns, especially when handling sensitive patient information or unpublished materials. Until we can be certain that AI tools comply with regulations such as GDPR in the EU and HIPAA in the US, entering sensitive information into these systems is simply not an option.

Research and note-taking tools

For literature searches, science-focused research engines offer an interesting alternative to general chatbots. Elicit, for example, draws exclusively from academic sources such as Semantic Scholar and PubMed, can summarize scientific papers and extract comparable data points across studies. Tools like this can complement traditional PubMed searches and help to find relevant publications that might otherwise be missed.

Note-taking tools, such as NotebookLM, can generate summaries, explanations, and answers based on user-uploaded content. They can support content creation and help to quickly navigate new or evolving disease areas. Because their output depends entirely on the uploaded sources, users retain full control over the information generated.

While these tools generally provide more reliable output than chat-based search engines, caution is still needed when it comes to prioritizing, interpreting, and contextualizing data. Although they can be used as enhancements to critical thinking, they cannot replace it.

Meeting agents

AI meeting assistants are increasingly becoming a part of everyday workflows. They can capture notes, generate summaries, and track action items. Beyond the built-in tools offered by Zoom and Teams, independent solutions like Otter can transcribe and summarize both live and previously recorded meetings.

Automated transcripts can greatly assist in creating accurate meeting minutes, although their reliability depends on audio quality and clear speech. AI-generated summaries are improving rapidly, but they still struggle to capture the most relevant insights, limiting their usefulness for creating professional meeting minutes and executive summaries.

What does the future bring?

There is no doubt that AI can bring real value to our daily work. Yet, human expertise remains essential for the nuanced, context-specific, and critical interpretation of data that AI tools cannot replicate. By combining AI capabilities with our professional judgment, we can work smarter, not just faster, enhancing both efficiency and the quality of our output. At the same time, it is important to recognize the limitations of these tools and remain mindful of the potential pitfalls that come with their use.

Reading: Recommendation on Where to Start

If you are new to the field, do not start with the math-heavy papers.

1. Read "Attention Is All You Need" (at least the abstract and introduction).
2. Read the Llama 3 Technical Report (it is surprisingly readable and gives you a view of modern AI engineering).
3. Then, pick a specific domain (Vision, NLP, Reinforcement Learning) and dive into the "Outstanding Paper" award winners from conferences like CVPR, NeurIPS, or ICML.
4. <https://medium.com/tech-spectrum/7-influential-research-papers-that-shaped-modern-ai-8f9b2d91d828>