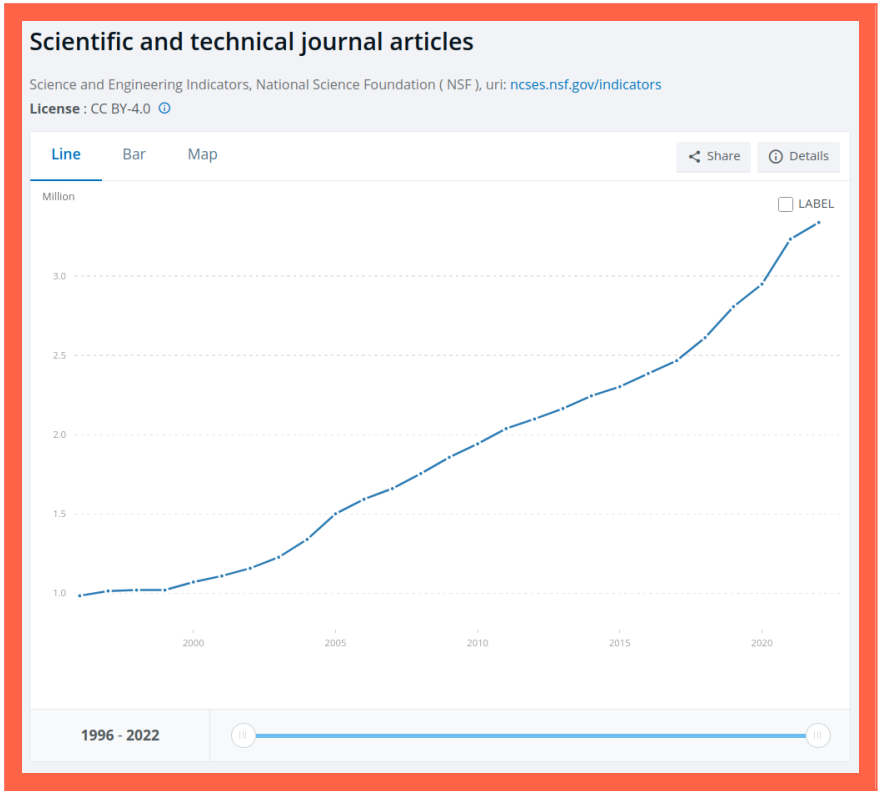
AI for the working mathematician - part 4?

Or: What is...reading with AI?

The number of papers grows very fast

https://data.worldbank.org:



- Big picture Today, well over 5 million academic articles appear every year worldwide, and the total still grows roughly exponentially
- Concrete numbers Since 2018 the yearly article count has risen by more than 20%, with millions of new papers added every year
- Why this matters for you You cannot "just read everything" anymore, so AI becomes a triage tool: skim, summarize, and point you to papers

AI has read a lot

	I	love	you
je	0.94	0.02	0.04
t'	0.11	0.01	0.88
aime	0.03	0.95	0.02

- Slogan AI finds results related to your work that you would never look at
- Why LLMs? E.g. suggesting nearby results is literally their bread-and-butter
- Today I show how I read with AI: surfacing unexpected connections, but always checking everything against the original text

What did studies find?

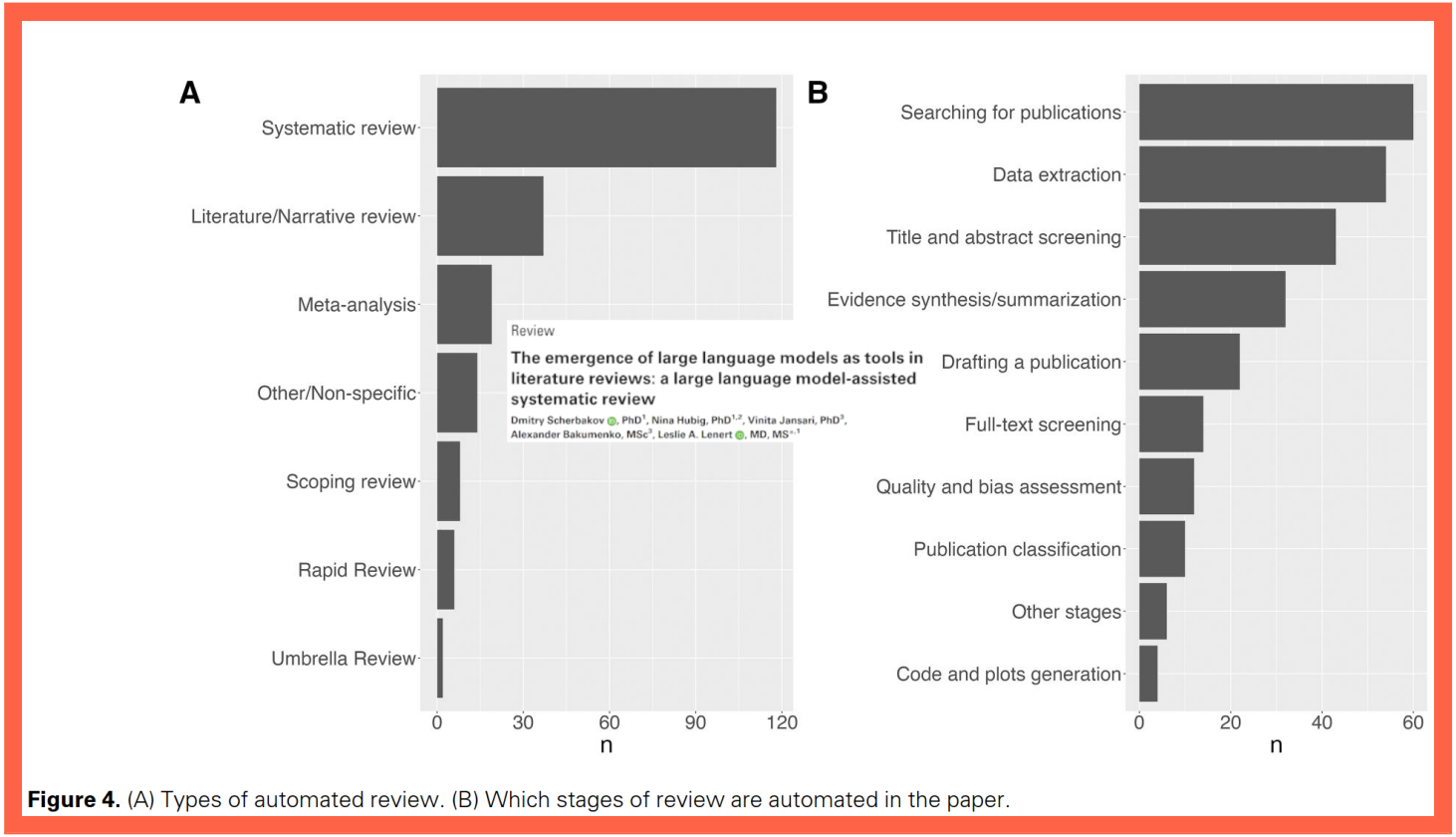
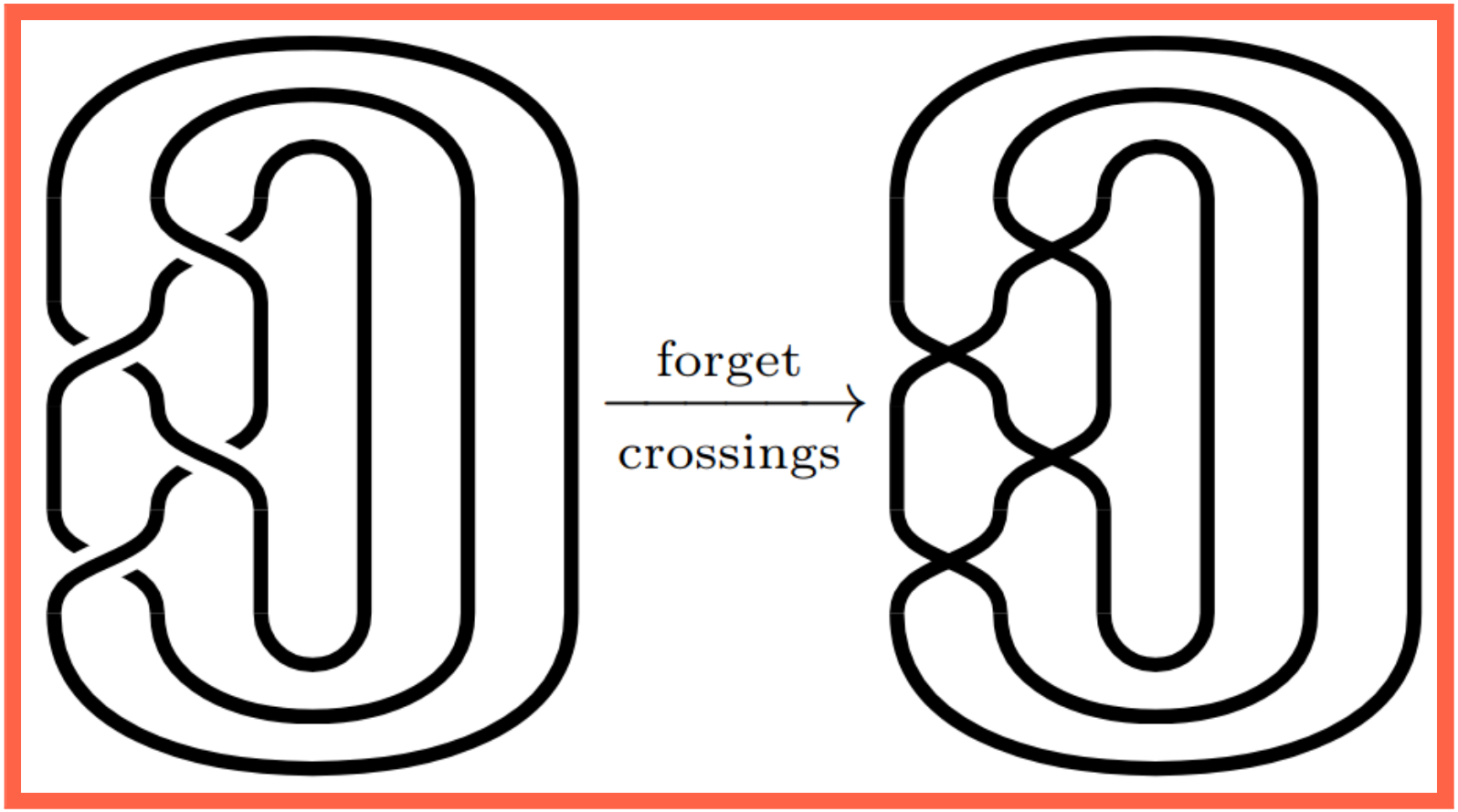


Figure 4. (A) Types of automated review. (B) Which stages of review are automated in the paper.

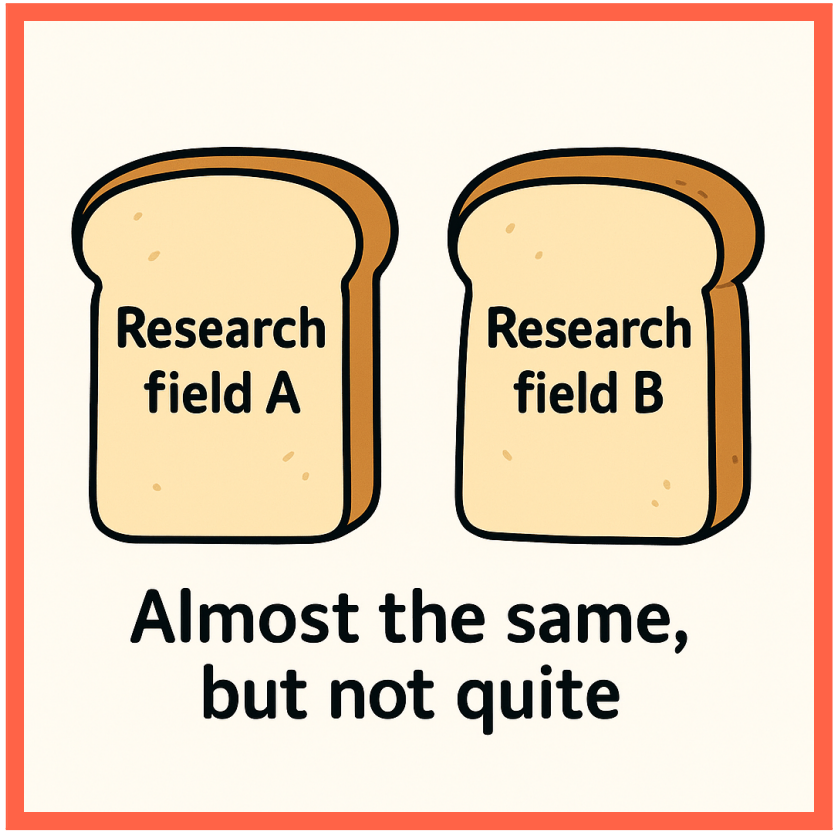
- Why? Studies report gains for search, summarization, etc.
- Trend More reviews (mostly relevant in non-math fields) are LLM assisted
- Takeaway AI is not a magic understanding machine, but it is very good at filtering and rephrasing large amounts of text for humans

An example from my own reading



- Fact (that I knew but forgot) An alternating link '=' planar graph
- I asked AI a (research level) question about alternating links and it found a very useful reference in planar graph land that I would have never looked at

Summary



- Why this helps a working mathematician You get a tireless reading partner that skims widely, suggests related work (even outside your field), and leaves you to decide what is actually interesting
- Try this next Take some paper and ask AI for related work in other fields
- You are still in charge of the big picture, so treat AI as a noisy assistant

Thank you for your attention!

I hope that was of some help.