

Some of you may have seen my presentation *Academics and AI: Calming the Farm*<sup>1</sup> at the HLA Conference in August. (I've included references in this presentation that will link you to everything I discuss.) I spoke of meeting a student in April who needed to complete a rapid systematic literature review and use generative AI (Artificial Intelligence) for the 'scoping of the topic'.

I planned to work with academic teaching staff and put together some guidance for them to create assessment tasks that practically embrace AI so that it's feasible for students to understand how:

1. To produce systematic types of reviews in short timeframes, and
2. To use suitable AI tools when doing reviews for the first time

I did end up producing a table of AI tools and how they might fit in with the review process, but I am now working on a new version of that table because I have changed my mind about the appropriateness of some of these tools, and their use by students for doing assessments.

But, going back in time even further, before I presented at the HLA conference in August, I was involved in planning for the RSC Day (or Research Support Community Day). There were a few presentations on AI, but Lorraine Rose's presentation (now available from our [RSC Day YouTube channel](#)) stood out because Lorraine from Charles Sturt Uni was doing something very similar to what I was doing. I've since re-watched [her presentation](#) which explains how librarians can choose a few AI tools, experiment with them, and create a table as a quick and easy reference when talking with students and researchers.

The other stand-out for me in Lorraine's presentation was that she had identified a few published reviews where the authors had used some of the AI tools we have tested or heard of already. So that sent me down another rabbit hole. Rather than reading articles and watching webinars about the potential for AI tools to assist in systematic-type reviews, which is what I had been doing, I was now interested in articles where the authors had used AI tools. I wanted to critique how well the tools were used and decide ultimately if I would recommend any of these tools to my researchers or students at Monash based on the standard of these published reviews.

The first review I looked at was one of Lorraine's that she had included in her slides. I recommend you read this review by Williamson and Prybutok<sup>2</sup> – it will make you shudder. I even contacted the authors to see if they could further elucidate their methodology. I didn't get much clarification, but I did get a little spiel about how AI has advanced since they conducted their review...blah, blah, and some AI tool recommendations. But in essence, their study is completely not replicable. They used keyword searches in Elicit (<https://elicit.org/>), SciSpace (<https://typeset.io/>), and something called MirrorThink (<https://mirrorthink.ai/>) which is powered by a GPT (Generative Pre-trained Transformer). Keyword searching in these tools doesn't work well...these tools respond best to well-constructed prompts or questions or more conversational queries, so even their use of the tools was incorrect.

Since September I've been focusing on finding similar reviews where the authors have used AI tools to do their reviews. It was slow to begin with but I think I've figured out the right method for searching. I'm up to 16 articles (see a copy of my table in Appendix 1 with my notes) so far.

My view now, supported by plenty of reading and webinar watching, is that AI tools have the potential to speed up systematic-type reviews, but are not at the point where I would recommend researchers use any of them for their reviews, apart from maybe some brainstorming or scoping searches for a gold set. The most promising use of AI I've identified is where the authors have customised tools with high-level coding or computing to create their own AI tools to help the

systematic review process.<sup>3,4</sup> But the AI tools that are off the shelf like Elicit, SciSpace, Research Rabbit (<https://www.researchrabbit.ai/>), or ChatGPT (<https://chatgpt.com/>) and the rest, are not fit for systematic review purposes. Not even the AI assistants that Monash has paid for, Microsoft Copilot (<https://copilot.microsoft.com/>) and Scopus AI (<https://www.elsevier.com/en-au/products/scopus/scopus-ai>) are suitable. As I just mentioned, at best staff and students could use such tools for scoping searches or brainstorming a research question, but that's where I would draw the line.

Last week I came across an article with Professor Paul Glasziou (one of our conference speakers) and Justin Clark from Bond University, contributing.<sup>5</sup> I'm anticipating the new systematic review from Justin, mentioned in this article, which seems to be doing what I'm doing now, locating studies where AI tools were used in reviews. Justin seems to be comparing AI tools against human reviewers. I am evaluating whether the authors used the AI tools well and whether I would consider them appropriate for systematic reviews. At this point, my answer is a definite 'no'. And to quote Justin "If I can't see the methods used, then it is not a systematic review, it is simply a review article."<sup>5(p278)</sup>

Next for me? I met with my academic last week who started my AI adventure, and we did a review of what we could improve about the assignment from April:

- We need to simplify the steps for the review and not use Cochrane Rapid Review Guidelines
- We need some examples for the students to show them what they should be trying to produce – I recommend a hybrid systematised rapid review and I've collected some possible examples to explore.<sup>6-8</sup>
- The students would like more support with resources. After all this, my original table wasn't used by the way (I thought the academic unit was run in Semester 2 but it wasn't). But as I've noted, I'm updating to version 2 of the table and it will be ready for Semester 1 next year.
- I've committed to preparing additional resources including an Articulate RISE tutorial for AI and Reviews, aimed at my academic's Masters students who are experienced health practitioners but not so much experienced researchers.
- I also want to ensure that the materials for academics and students include ethical, environmental, and bias issues of AI. I also want to encourage some freedom of choice within assessments as to whether AI can be bypassed.<sup>9</sup>

And the purpose of this whole exercise? I'm ready and confident to advise students and researchers about using AI for their systematic-type reviews, based on all the reading and webinars, creating the tables, and continuing to look at where we are headed with this. I know others have different opinions, and that's OK. I'm comfortable that I've been objective and am not just being 'difficult'. And I'll keep myself informed of any new developments. I'm throwing myself back into automated tools like Polyglot (from the SR Accelerator) etc. so I can give researchers something to ease their tasks... it's just not going to be AI yet.

To finish up I love it whenever I read or hear something that remotely deflates the hype around AI, like Gartner's predictions that the demise of some of these tools is imminent due to "poor data quality, inadequate risk controls, escalating costs or unclear business value".<sup>10</sup> For those in the CoP today who weren't at the conference in August, I modified the Ithaka Product Tracker to keep notes about AI tools and their developments.

I am also excited to have the whole of December as annual leave. For anyone interested, this is my shortlist of AI tools that I am continuing to play with and test for reviews and/or review assessments at Monash:

- Microsoft Copilot (Monash)
- Semantic Scholar <https://www.semanticscholar.org/>
- Scopus AI (Monash)
- Ask R Discovery <https://discovery.researcher.life/ask-rdiscovery>
- ProQuest Research Assistant (Monash beta in ProQuest One)
- Undermind.ai <https://www.undermind.ai/>
- Grammarly (free version) <https://app.grammarly.com/>
- Connected Papers <https://www.connectedpapers.com/>
- Covidence (Monash)
- the Literature.com <https://www.the-literature.com/>
- NotebookLM (new November 2024 at Monash)

## References

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2. Williamson SM, Prybutok V. Balancing privacy and progress: a review of privacy challenges, systemic oversight, and patient perceptions in AI-driven healthcare. *App Sci*. 2024;14(2):675. doi:10.3390/app14020675
3. Whelan J, Ghoniem M, Médoc N, Apicella M, Beck E. Applying a novel approach to scoping review incorporating artificial intelligence: mapping the natural history of gonorrhoea. *BMC Med Res Methodol*. 2021;21(1):183. doi:10.1186/s12874-021-01367-x
4. Scherbakov D, Hubig N, Jansari V, Bakumenko A, Lenert LA. The emergence of Large Language Models (LLM) as a tool in literature reviews: an LLM automated systematic review. *arXiv*. Preprint posted online September 6, 2024. doi:10.48550/arxiv.2409.04600
5. Pearson H. Can AI review the scientific literature — and figure out what it all means? *Nature*. 2024;635(8038):276-278. doi:10.1038/d41586-024-03676-9
6. Prakash A, McGlade K, Roxy MK, Roy J, Some S, Rao N. Climate adaptation interventions in coastal areas: a rapid review of social and gender dimensions. *Front Clim*. 2022;4. doi:10.3389/fclim.2022.785212
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8. Mathews B, Bromfield L, Walsh K, Vimpani G. *Child abuse and neglect: a socio-legal study of mandatory reporting in Australia - Report for the Australian Government*; 2015. Brisbane, Queensland University of Technology. Accessed November 19, 2024. <https://www.dss.gov.au/families-and-children/publications-articles/child-abuse-and-neglect-a-socio-legal-study-of-mandatory-reporting-in-australia>
9. Montenegro M. *AI policy: a critically engaged approach*. ENVS 130B | ENVS 178 Unit Guide [Google Doc]. Accessed November 8, 2024. [https://docs.google.com/document/u/1/d/1t4Qjpu5aqjh0TyQfTm8l\\_-UfrV4vWnBF4ENwyud3aGQ/pub?urp=gmail\\_link](https://docs.google.com/document/u/1/d/1t4Qjpu5aqjh0TyQfTm8l_-UfrV4vWnBF4ENwyud3aGQ/pub?urp=gmail_link)
10. Karjian R. The history of artificial intelligence: complete AI timeline. *TechTarget*. September 24, 2024. Accessed November 12, 2024. <https://www.techtarget.com/searchenterpriseai/tip/The-history-of-artificial-intelligence-Complete-AI-timeline>

## Appendix 1

	Citations for reviews that used AI in the methods	Comments	Publishers	Located by	Countries
22/08/2024	Williamson SM and Prybutok V (2024) 'Balancing Privacy and Progress: A Review of Privacy Challenges, Systemic Oversight, and Patient Perceptions in AI-Driven Healthcare', Applied Sciences, 14(2):675, doi:10.3390/app14020675	Contacted authors - unreplicable. They used Elicit, SciSpace and Mirrorthink	MDPI	Lorraine Rose	US
04/10/2024	Utami PL, Suprpto N, Hidaayatullaah HN and Cheng T-H (2024) 'The comparison of Chat GPT, Perplexity AI, and Scopus database to capture Indonesian higher education quality in achieving SDGs 2030', E3S Web of Conferences, 51304001, doi:10.1051/e3sconf/202451304001	ChatGPT and Perplexity and Scopus?	EDP Sciences	Lorraine Rose	Indonesia
04/10/2024	Anghelescu A, Firan FC, Onose G, Munteanu C, Trandafir A-I, Ciobanu I, Gheorghita S and Ciobanu V (2023) 'PRISMA Systematic Literature Review, including with Meta-Analysis vs. Chatbot/GPT (AI) regarding Current Scientific Data on the Main Effects of the Calf Blood Deproteinized Hemoderivative Medicine (Actovegin) in Ischemic Stroke', Biomedicines, 11(6):1623, doi:10.3390/biomedicines11061623	they originally did a SR in 2020, but then tried ChatGPT to almost do an update.	MDPI	MDPI - Multidisciplinary Digital Publishing Institute database. Entered ChatGPT [Title/keyword] and Systematic reviews [article type].	Romania
30/10/2024	Chacon MA and Wilson NA (2023) 'The Challenge of Small Intestine Length Measurement: A Systematic Review of Imaging Techniques', Journal of Surgical Research, 29071-82, doi:https://doi.org/10.1016/j.jss.2023.04.011	Ran database searches then 'A collection containing all included articles was created in ResearchRabbit and the AI search tool suggested an additional 45 unique articles as "similar work." See appendix 1 for searches	Elsevier	Medline 1.(perplexity or "connected papers" or litmaps or scispace or scholarcy or chatgpt or copilot or gemini or semantic scholar or scite or "research rabbit" or keenious or underminer).ab. 2. exp Artificial Intelligence/ 3. research tools.ab. 4. (AI or artificial intelligence).ab. 5. 2 or 3 or 4 6. 1 and 5 7.limit 6 to ("review articles" and yr="2023 - Current")	US
30/10/2024	Whelan J, Ghoniem M, Médoc N, Apicella M and Beck E (2021) 'Applying a novel approach to scoping review incorporating artificial intelligence: mapping the natural history of gonorrhoea', BMC Medical Research Methodology, 21(1), doi:10.1186/s12874-021-01367-x	Created their own AI Papyrus that is a PubMed/Medline AI. Their methodology was explained well and their supplementary files made things even more transparent and replicable doi:10.1186/s12874-021-01367-x	Springer Nature	?	Europe & US
01/11/2024	Vastag T, Eisinger-Balassa B. Systmatic Literature Review on Overspending and Sustainable Budgeting: Insights for	Used VosViewer	MDPI	?	Hungary

	Hungarian Households. Sustainability. 2024;16:9509. doi:10.3390/su16219509				
04/11/2024	Jerratsch H, Beuse A, Spitzer MS, Grohmann C. The Current Status of OCT and OCTA Imaging for the Diagnosis of Long COVID. Journal of Clinical & Translational Ophthalmology. 2024;2(4):113-130. doi:10.3390/jcto2040010	Elicit and PubMed. Their search strategies/prompts were included in Appendix A, but in no way is systematic	MDPI	Elicit [Title/keyword] and Systematic reviews [article type]	Germany
04/11/2024	Leão CP, Silva V and Costa S (2024) 'Exploring the Intersection of Ergonomics, Design Thinking, and A/ML in Design Innovation', Applied System Innovation, 7(4):65, doi:10.3390/asi7040065	Used only Elicit to find papers, description of prompts but unreplicable and again went to VosViewer for clusters. Used ChatGPT for 'resume' and Grammarly	MDPI	Elicit [Title/keyword] and Systematic reviews [article type]	Portugal
04/11/2024	Kazeem KO, Olawumi TO, Adam JJ and Lam EW-M (2024) 'Integration of Building Services in Modular Construction: A PRISMA Approach', Applied Sciences, 14(10):4151, doi:10.3390/app14104151	used Scopus (see search) and Research Rabbit (methods?), VosViewer (why?) and aversion to grey lit searching	MDPI	"Research Rabbit" [Title/keyword] and Systematic reviews [article type]	Hong Kong
04/11/2024	Fernando X and Lăzăroi G (2024) 'Energy-Efficient Industrial Internet of Things in Green 6G Networks', Applied Sciences, 14(18):8558, doi:10.3390/app14188558	used Abstrackr, DistillerSR, CADIMA, Rayyan, SRDR, VosViewer and Dimensions	MDPI	Vosviewer [Title/keyword] and Systematic reviews [article type]	Canada and Australia
04/11/2024	Wang Y, Cheng W, Sufi F, Fang Q and Mahmoud SS (2024) 'A Systematic Review of Using Deep Learning in Aphasia: Challenges and Future Directions', Computers, 13(5):117, doi:10.3390/computers13050117	Vosviewer and Litmaps	MDPI	Vosviewer [Title/keyword] and Systematic reviews [article type]	China and Australia
04/11/2024	Arcas VC, Fratila AM, Moga DFC, Roman-Filip I, Arcas A-MC, Roman-Filip C and Sava M (2024) 'A Literature Review and Meta-Analysis on the Potential Use of miR-150 as a Novel Biomarker in the Detection and Progression of Multiple Sclerosis', Journal of Personalized Medicine, 14(8):815, doi:10.3390/jpm14080815	SciSpace and databases - unable to replicate	MDPI	SciSpace [Title/keyword] and Systematic reviews [article type]	Romania
05/11/2024	Hagendorff T (2024) 'Mapping the Ethics of Generative AI: A Comprehensive Scoping Review', Minds and Machines, 34(4), doi:10.1007/s11023-024-09694-w	Elicit, Scholar, arXiv, PhilPapers, NVIVO	Springer Nature	Computer Science, Elicit, Review article, Last 24 mths	Germany
07/11/2024	Dewi Anggraini P, Sesaria L, Andari Wuri A and Septiana Ade A (2024) 'CUPPING AND FEMALE REPRODUCTIVE PROBLEMS: A NARRATIVE REVIEW', International Journal of Islamic and Complementary Medicine, 5(2):136-148, doi:10.55116/ijcm.v5i2.89	narrative review PubMed, ScienceDirect, EBSCO, and Grey Literature, as well as Google Scholar and Research Rabbit - no way to see /know method of searching apart from search string. No PRISMA	<a href="#">International Islamic Medical Forum</a>	OpenAlex "research rabbit" and reviews filter	Indonesia
07/11/2024	Leis O, Sharpe BT, Pelikan V, Fritsch J, Nicholls AR and Poulus D (2024) 'Stressors and coping strategies in esports: a systematic review', International Review of Sport and Exercise Psychology1-31, doi:10.1080/1750984x.2024.2386528	Research Rabbit in addition to databases and search engines - no idea how the searches were conducted and number of results found?	Taylor & Francis	OpenAlex "research rabbit" and reviews filter	Germany, Australia
08/11/2024	Scherbakov D, Hubig N, Jansari V, Bakumenko A and Lenert LA (2024) 'The emergence of Large Language Models (LLM) as a tool in literature reviews: an LLM	This team created their own plugin for Covidence using an LLM to do screen 1 &	arXiv	didn't document how I found this one - most likely	US

	automated systematic review', ArXiv, doi:10.48550/arxiv.2409.04600	2, and extraction then used AI for some of the writing up. Interesting but next level. They wanted to determine whether AI could help with doing reviews		a reference somewhere	
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