Australian Society of Medical Imaging and Radiation Therapy
The national professional organisation representing medical radiation practitioners
ABN 26 924 779 836

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RANZCR Generative Artificial Intelligence and Large Language Models

The Australian Society of Medical Imaging and Radiation Therapy (ASMIRT) is the peak body representing medical radiation practitioners in Australia. Our aims are to promote, encourage, cultivate and maintain the highest principles of practice and proficiency of medical radiation science, always mindful that the welfare of the patient should be at the centre of everything we do.

Please find some feedback on the above document:

The position paper is succinct and addresses the necessary areas for consideration when utilising Generative AI and LLMs in the clinical environment. Noting that as technology advances, so will the need to consider updates.

Line 157	ASMIRT recognises that the data sovereignty section covers this, however we feel that stronger language would be useful. The terms and conditions for a lot of the LLMs are vague and there are stories of data leaks: https://www.forbes.com/sites/siladityaray/2023/05/02/samsung-bans-chatgpt-and-other-chatbots-for-employees-after-sensitive-code-leak/?sh=145762346078 See points about privacy here: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11130776/
Line 163	Even with a high level of prompt engineering outputs can be misleading in a subtle way that only an expert could pick up on. For example, asking an LLM to summarize a radiology report is something that many will do, however longer more sub specialized reports are prone to output errors that could have implications if the reader does not understand the subject matter. ASMIRT does not believe that saying this can be fixed via prompt engineering is useful here, it implies the issue can be fixed (most of the time it can) but it would be good to ensure the reader is checking the output carefully.
Lines 175-176	Can also say a lot of LLMs are trained off of the Internet, scraping sites such as Reddit and Quora - information is not peer reviewed.
Lines 181 - 182	ASMIRT suggests a rewording of the statement to state that AI is trained a lot of the time from the Internet and hence only population groups with a voice are heard and trained off. Perspectives are narrow and often western centric.
Line 220	ASMIRT seeks to clarify whether there should be a section addressing transparency? Ie. if a report/executive summary is written by AI, should the author declare it as such?

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	Looking long term, there may be the situation of LLMs learning off LLM outputs, causing a weird loop of LLM output generation that could easily be avoided if content was flagged as such. This may not be relevant this document.
Lines 220 - 227	Guidance section ASMIRT notes that this section is short and to the point, and as such may be overlooked on page 6. ASMIRT acknowledges that this is a good summary detailing what generative AI is and the associated risks. Policies involving GenAI will/should need to acknowledge that the policy itself can evolve/change at any point. Given the fast pace of Generative AI and its impact will need policymakers to think about the fluidity of policymaking.

Other comments:

- This is very topical in education currently. ASMIRT suggests that one strategy/ recommendation is *to acknowledge when Generative AI has been part of developing an outcome* eg any part of an assessment, documentation, guidelines, topic scoping, project design, patient information, etc. This in itself may be part of the due diligence or QA with regard to Clinical use of Generative AI.

- Microsoft has 'Copilot', unsure if it is Microsoft is ChatGPT affiliated anymore, and now Apple has theirs. ASMIRT suggests caution when listing generative AI and affiliations when they are open to change

- Other potential uses: generating patient information beyond chat bots, patient information sheets for procedures, and very specific uses in treatment planning, which is limited to a single dot point, i.e. use of LLM auto-seg based on segmentation for imaging reports

- Breach of confidentiality: language in point 1 of 'risks' says, 'will most certainly be', should this read 'is a breach'. ASMIRT feels that this is a huge risk for patients given the DICOM data linked in their imaging which many users may not be aware of, and as LLM accept imaging scans, this could lead to big breaches of patient confidentiality if the input data is purchased or sold by LLM platforms, for example, brain imaging and 3D facial reconstruction tools

- Errors, hallucination etc: LLMs are known to make up research papers, references and journals in relation to radiation oncology and radiology research outputs.

- In addition, LLMs may have errors when asked about specific doctors or specialists within RANZCR or the medical industry, if patients or consumers use LLM models for information about certain individuals

- potential applications section to change the scientific research dot point to:
  - Scientific research (including using LLMs to assist with analysis of de-identified clinical data)

- There are comments regarding sharing of data but perhaps worth explicitly stressing that spreadsheets with even de-identified data should not be loaded up to some of these tools that will automatically do your analysis for you

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- ASMIRT also suggests that maybe we are not yet at the point where we know enough about the LLM's to know when they are useful.

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