LLMs and Telehealth

Enhancing telehealth with large language models

Overview

Large language models (LLMs) like ChatGPT are the technological disruptors of this decade. This research will specifically focus on how can LLMs be integrated effectively & safely into telehealth services. Telehealth is the delivery of medical care from a distance using technology, and it is the obvious area for LLMs to be used within healthcare. UQ Centre for Online Health focuses on telehealth research and is an international leader in this area. We will partner with the QUT ARC Centre of Excellence for Automated Decision Making and Society who have leading LLM experts on staff. To achieve our aims, we will investigate the functionality of LLMs using a quality and safety lens to identify regulation needs and potential use-cases. We will engage with consumer and clinicians to garner their opinions and knowledge regarding LLMs in healthcare, and their potential uses. Armed with this information we develop educational content for consumers and clinicians, and partner with professional societies to develop clinical use guidelines. Finally, we will an LLM-enhanced telepharmacy demonstration project as a proof of concept. We have already published two papers on the topic aimed at educating clinicians and applied for two separate 5-year grants (outcomes pending) to fund this project. Information is available here:

coh.centre.uq.edu.au/article/2023/04/what-chatgpt-and-what-does-it-mean-clinical-practice

The Need

Dr Centaine Snoswell, who is leading this work, is a pharmacist and an early career researcher who is an international expert in the development, evaluation, and sustainability of telehealth services. Dr Snoswell is currently covering her wages by undertaking consultancy, contract research, and through winning smaller project grants. Without dedicated funding for this project to cover Dr Snoswell's time and the direct project costs (i.e. consumer engagement & LLM technology access) this work will not be feasible in a timely manner.

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Research projects	Cost/year
Year 1: Scoping existing services, evidence and health-related consumer searches. Consumer and clinician engagement, interviews and survey.	$235,000
Year 2: Develop consumer and clinician educational content for public release. Perform quality and safety analysis of state-of-the-art LLM for pharmacy enquiries	$250,000
Year 3: Develop clinical use guidelines in partnership with professional organisations. Further consumer and clinician engagement required.	$275,000
Years 4-5: Develop and evaluate LLM-enhanced telepharmacy minor-ailments chatbot treatment demonstration project.	$500,000

Your Impact

LLMs are being integrated into internet search engines, so whether or not clinicians or patients are ready to interact with LLMs they will soon be part of daily life. Researching how to integrate LLMs effectively and safely into telehealth services is therefore crucial. This proposal addresses the lack of evidence and holistically explores the role of LLMs in the context of telehealth, which is where they will likely be integrated into consumer-facing care. A lack of understanding of LLMs could lead to misinformation, misdiagnosis, and dangerous patient outcomes if consumers and clinicians are not properly educated about LLM systems. LLMs are a new horizon for consumer and clinician digital literacy.

Thank you

If our project aligns with your interests, we'd be pleased to discuss our recent exciting findings, and honoured to have your support to advance this work to the next level.

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