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P034 Using artificial intelligence to bridge the technical gap in dermatology: the role of large language models in creating an interactive Fitzpatrick skin phototype assessment

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Patient engagement is evolving with the advent of digital tools such as interactive websites and artificial intelligence (AI), yet significant barriers remain in the technical expertise required to create tools that benefit patients. We explore how large language models (LLMs), a type of AI that can facilitate and accelerate programming tasks, can enable clinicians and researchers to create interactive web-based patient engagement tools without the need for a dedicated web developer. We explore this possibility by developing, with the help of an LLM, an interactive skin self-assessment web tool. We used GPT4, a state-of-the-art LLM, as a web development assistant, and created an interactive JavaScript web page that guides patients through the Fitzpatrick skin phototype questionnaire. This involved building a minimal version first, and iteratively improving it. The web page initially asked the user the first two questions of the assessment, calculated a score, and returned this to the user. Once the code written by GPT4 was tested and shown to work, the tool was gradually improved to include all questions in the Fitzpatrick scale, and the result was modified to provide not only the total score, but also the result category. GPT4 allowed us, with no experience writing interactive JavaScript web pages, to develop and launch a web page that guides patients through a Fitzpatrick scale assessment. When GPT4 was asked to expand the questionnaire from two questions to the whole test, it gladly did so; however, the questions were not accurate. It then had to be given the specific wording of the questions and answers for the test, which it incorporated into functioning JavaScript code. This had to be performed in stages, adding two questions at a time, due to context limitations at the time. When this introduced issues, such as the code breaking or the website style looking inconsistent, GPT4 was able to fix these issues when they were described to it. Since the web page’s launch in March 2023, the web page has been viewed 1875 times by 1419 unique users. This study demonstrates one way that LLMs can be used to enhance patient engagement in dermatology, by facilitating the creation of interactive skin assessments with utility in many dermatology settings. Hallucination remains a problem, and any created tools must be thoroughly verified for factuality. Although no authors had any experience...
writing interactive JavaScript, they have coding experience elsewhere, and future work should assess whether similar results can be achieved by a broader user base. Two authors received funding from a commercial organization for this work (A & Z Dermatology Clinic Ltd).