

# NUS-Priority Research In Medical Education

## Machine in the Loop: Harnessing AI for Enhanced Educational Assessment



Generative AI technologies, such as ChatGPT bring an unprecedented change in education by leveraging the power of natural language processing and machine learning. To date the primary focus is how student use of generative AI may impact learning. For educators, employing generative AI tools like ChatGPT to assist with written assessment marking presents multiple advantages such as scalability, improved consistency, eliminating biases associated with subjective variances in human judgment, and ultimately enhance teaching and learning.

Our project aims to evaluate the usefulness, reliability, and accuracy of ChatGPT in grading written assessments and to identify limitations and challenges.

### Dr Joan LI

Academy for Medical Education, Medical School, Faculty of Medicine, University of Queensland, Australia

Dr Joan Li, MD and PhD (Medicine, UQ), is a clinically trained medical researcher and medical educator. She is directly involved in face-to-face teaching in biomedical science and medicine, with strong interests in curriculum design, development, and assessment. She brings discipline knowledge, strong analytical skills and innovative approach to teaching practices. She is currently leading an innovative scholarly project analysing Generative AI potential in assessment across the University of Queensland.

## Leveraging AI for MCQ Generation



This talk explores the use of large language models (LLMs), such as ChatGPT, in generating high-quality medical multiple-choice questions (MCQs). The process involved crafting detailed instruction stems aligned with core medical concepts and Bloom's taxonomy to guide the model. Iterative refinement of prompts was used to improve question quality and ensure balance in difficulty levels. Human validation was essential for ensuring factual accuracy and quality. The findings highlight that while LLMs can enhance question generation, human expertise remains critical in ensuring the final output's accuracy, maintaining the importance of expert oversight in AI-assisted educational assessment development.

### Dr Priya PARANTHAMAN

Department of Pharmacology, NUS Medicine, Singapore

Dr Priya Paranthaman, a clinician-turned-educator with an MBBS and MD in Pharmacology from India, has an interest in neuropsychopharmacology. She focuses on innovative teaching methods and educational research, including AI integration for MCQ generation. Currently involved in a TEG project to enhance medical and allied health education and teaches undergraduate and postgraduate students in medicine, nursing, and life sciences.

**Date : 7 October 2024 (Monday)**  
**Time : 12.30pm - 1.30pm Singapore Time (30mins each)**

**Registration closes on 3 October 2024**

Register [here](#) or scan the QR code



*This session will be conducted online*

**Each Speaker:**

**20mins pre-recorded presentation +**

**10mins 'Live' Q&A**



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