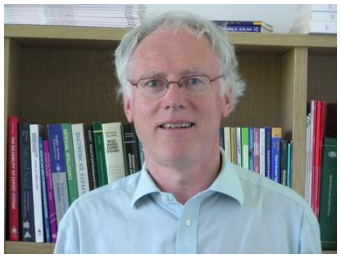
University of Victoria

Health Information Science Seminar Series

Prof Jeremy Wyatt DM FRCP, ACMI Fellow

Emeritus professor of digital healthcare, Southampton University, UK

Nervous about neural networks? How evaluation can make medical AI products safer



Wednesday, October 14th, 2020
10:00 am - 11:00 am Pacific (Online via Zoom)

Abstract

Increasing numbers of medical AI products are being developed that offer real potential for medical image analysis, symptom checking, risk prediction and other use cases. Many of these are derived from machine learning on large datasets using neural networks and deep learning, so offer scanty explanations or justifications for their output – so called "black boxes". Before relying on the output from these systems, clinicians and patients need to be satisfied that they are safe enough to make a positive net contribution to the quality and efficiency of health systems. However, there are a long list of potential risks associated with using machine learning to develop decision support systems such as over fitting, unintended incorporation of helpful hints into the training data, or a mismatch between the quality of input data in real life settings compared to the development environment.

This talk will describe some of the ways that careful external validation of medical AI products can help to manage these risks and make these products safer for use in healthcare.

Prof Jeremy Wyatt trained in medicine in Oxford and London and as a hospital physician there & Glasgow (MRCP 1983). He then discovered medical informatics and health technology assessment with doctoral training at the National Heart & Lung Institute and an MRC-funded postdoc at Stanford. He was the UK's first elected Fellow of the American College of Medical Informatics in 1997, was ranked third in his discipline worldwide in 2009 and has given 40 invited overseas talks in the last decade, including the Amsterdam Spinoza lecture series.

Jeremy is Emeritus Professor of Digital Healthcare and former Director of Wessex Institute and Clinical Adviser on New Technologies to Royal College of Physicians. He currently leads the FCI's Special Interest Group on AI, His research uses empirical methods to uncover scientific principles guiding the design of clinical information and eHealth systems, studying interactive tools to change the behaviour of clinicians (eg. decision support), patients (eg. apps, telehealth) and the public (eg. SMS msgs to promote healthy lifestyle), and of digital tools to support health research.

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