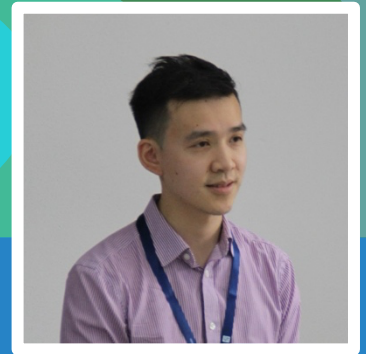


Julian Costello Award Winner 2024 Blog



“Yassas!” Greetings from Athens and the Medical Informatics Europe (MIE) Conference 2024, co-organised by the European Federation for Medical Informatics Association (EFMI) and the Greek Biomedical and Health Informatics Association. The theme focussed on "Digital Health and Informatics Innovations for Sustainable Health Care Systems" and provided a comprehensive overview of the current landscape and future directions of digital health, particularly focusing on the integration of artificial intelligence (AI) into healthcare.



This particularly highlighted the complex interplay between technology, social context, and healthcare systems, underscoring the need for a cautious and inclusive approach to implementing new technologies. One of the key takeaways was the necessity of a systems approach when introducing new technologies into healthcare. This process demands rigour, requiring careful consideration of various specifications such as safety, time, and precision. The potential is vast, but so are the responsibilities in shaping an AI-driven future in medicine.


The keynote on AI in health and sustainable care models further expanded on these ideas. AI's potential in early disease detection and personalized treatment plans is undeniable, but the session also emphasized the crucial need to combine both compassion and technology in order for AI to truly transform healthcare. It highlighted importance of considering the social context in AI development. For example, the use of novel sensor modalities to detect social states, such as loneliness, must account for socio-political and cultural factors, like the lack of broadband in some homes, which could hinder the deployment of such technologies. Digital inclusion emerged as a critical theme for me. Without it, the development, implementation, and evaluation of healthcare technologies may miss the mark, especially for those who need them most.

A case study on embodied conversational agents acting as digital companions in the community for patients with dementia, illustrated both the potential and limitations of AI in healthcare. While patients

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appreciated the idea of a digital companion, there were significant issues, such as limited vocabulary, repetitive questioning, and inappropriate timing in starting conversations. Many users commented that they just wanted a 'physical hug', which was clearly not possible from current devices. This case underscored the importance of user-centred design and the need for continual patient input in the development and evaluation of digital tools.



Reflecting on the future steps for applying generative AI in medical informatics, there was a heavy emphasis was on collaboration - between patients, professionals, data analysts, software engineers, experts in human factors engineering (HFE), human-computer interaction (HCI), user experience (Ux) and with industry. The discussions on mobile usability labs, and gamification of health behaviours highlighted some of the diverse human-centred evaluations of AI and digital health technologies. Gamification, for instance, can even allow AI to directly engage patients and families outside of existing healthcare models.

An exciting lecture from international experts also highlighted future opportunities for precision care and prevention in the age of deep learning and generative AI. Despite over 65,000 diseases classified in SNOMED CT, we only have recognised treatments for 3-4000, yet AI has already begun to uncover novel clinical syndromes and potential drug repositioning, particularly through running simulation and cohort trials combining DNA repositories and large-scale real-world data. This could be combined with the speed and accuracy that AI can offer in identifying new therapeutic targets or repurposing existing drugs to enhance the efficiency of the pharmaceutical products. This offered a glimpse into how AI can revolutionize our understanding of human health at a molecular level.

Overall, the award was an incredible opportunity to explore, reflect and immerse myself in the fast-paced developments of medical informatics and AI in healthcare. I would greatly encourage anybody who is even thinking of applying to apply! Not only did I get to



meet with the other award winners, but it was also a great blessing to have fruitful conversations with Senior GPs such as John and Vije. They genuinely cared for my wellbeing and future and had insightful perspectives as veteran informaticians, who have seen the rise and fall of technologies and many of the fleeting initiatives from politics and policy

that are implemented swiftly and pass by quickly, yet intensely define how General Practice is delivered.

Aristotle is known to emphasise the importance of 'practical wisdom' (phronesis), or the 'wisdom of action' to allow sound judgement. The Julian Costello Award provides just that, allowing exposure to multiple applications of AI in medicine through cutting edge research, developments in international frameworks for ethical responsibility and connections with medical informaticians from a range of stages allowing networking, community and professional growth.

