

Academic Seminar

Patient Dropout Prediction in Virtual Health: A Multimodal Dynamic Knowledge Graph and Text Mining Approach

Virtual health has been acclaimed as a transformative force in healthcare delivery. Yet, its dropout issue is critical that leads to poor health outcomes, increased health, societal, and economic costs. Timely prediction of patient dropout enables stakeholders to take proactive steps to address patients' concerns, potentially improving retention rates. In virtual health, the information asymmetries inherent in its delivery format, between different stakeholders, and across different healthcare delivery systems hinder the performance of existing predictive methods. To resolve those information asymmetries, we propose a Multimodal Dynamic Knowledge-driven Dropout Prediction (MDKDP) framework that learns implicit and explicit knowledge from doctor-patient dialogues and the dynamic and complex networks of various stakeholders in both online and offline healthcare delivery systems. We evaluate MDKDP by partnering with one of the largest virtual health platforms in China. MDKDP improves the F1-score by 0.05 relative to the best benchmark. Comprehensive robustness analyses show that integrating stakeholder attributes, knowledge dynamics, and compact bilinear pooling significantly improves the performance.



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Dr. Shuang Geng is currently an assistant professor at the Department of Management Science, College of Management, Shenzhen University. She obtained her Bachelor and PhD. Degree at City University of Hong Kong. Her research directions include: management information system, intelligent decision-making system, digital media user behavior, education technology innovation, etc. She has published a number of papers in journals such as IPM, CHB, IJIS, C&E, IR, IMDS, and three books. She used to serve as the session chair of ICSSSM'19, PACIS2022, ICSI2022 international conferences and as the editorial board member of Computers & Education: X Reality.

Date: 28 July 2023 (Friday)

Time: 14:30 - 15:30

Venue: SEK106, 1/F., Simon & Eleanor Kwok Bldg.

Language: English



**** ALL ARE WELCOME ****