

Towards Clinically Accurate Medical Image Report Generation

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McGill University, 680 Sherbrooke West Room 361

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Abstract:

Medical images are complex. We typically need radiologists' expertise to examine them, recognize normal and abnormal findings, and prepare the medical image report. The process of medical image examination and reporting sometimes can be error-prone, especially when the workload is excessive, e.g., due to staff shortage. AI tools which can automatically generate medical image reports to be validated by radiologists will be particularly helpful. As compared to other text generation applications, the key challenge of medical image report generation is the report's clinical accuracy. In this talk, I will present our recent work on developing deep learning models for the report generation, including the incorporation of attributed graph structure into the model architecture and the use of an anatomy-aware hierarchical vision encoding which is designed to allow user interaction.

Bio

William K. Cheung received the Ph.D. degree in computer science from the Hong Kong University of Science and Technology in 1999. He is currently the Associate Vice President (Undergraduate Programmes), Professor of Computer Science and Director of Centre of Health Informatics at Hong Kong Baptist University. His research interests include artificial intelligence, data mining, social network analysis, and healthcare informatics. He has served as the PC member of AAAI, IJCAI, NeurIPS, UAI, ICLR, etc., and the programme co-chairs for a number of international conferences and workshops on areas including artificial intelligence, machine learning, data mining, Web intelligence, and health informatics. From 2002-2018, he was on the Editorial Board of the IEEE Intelligent Informatics Bulletin. He is a Track Editor of Web Intelligence Journal and an Associate Editor of Journal of Health Information Research, and Network Modeling Analysis in Health Informatics and Bioinformatics. In recent years, he is also heavily involved in implementing transdisciplinary undergraduate programmes in the areas of health innovation, arts and technology, and digital humanity. He is currently a Visiting Professor at the McGill School of Information Studies.

