

The Integration of Artificial Intelligence in Diagnostic Medical Imaging

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Abstract

Artificial Intelligence (AI) is rapidly transforming the field of medical imaging, with the potential to improve diagnostic accuracy, enhance workflow efficiency, and support clinical decision-making. This presentation will introduce the implementation of responsible AI practices in Chang Gung Memorial Hospitals, using diagnostic medical imaging AI as an example. It will outline the workflows for AI software proposal, development, validation, acceptance, application promotion, and business model establishment. In addition, the presentation will introduce our ongoing radiomics research in medical imaging. Radiomics involves extracting large volumes of quantitative features from medical images through advanced data-characterization algorithms, enabling a deeper phenotypic understanding of tumors and other pathologies that go beyond conventional visual interpretation. Through the integration of machine learning models, radiomic data can support precision medicine by predicting treatment outcomes, patient prognosis, and disease recurrence.