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ABSTRACT

Data processing and learning have become a spearhead for the advancement of medicine, with pathology and laboratory medicine as no exception. The incorporation of scientific research through clinical informatics, including genomics, proteomics, bioinformatics, and biostatistics, into clinical practice, unlocks innovative approaches to patient care. The rise of Artificial Intelligence (AI) and Deep Learning (DL) techniques and their applications in various fields have brought immense value in providing insights into advancement in support of medical pathology. In this project, Deep Learning models are proposed for classifying these pathologies, including Convolutional neural networks (CNN). To test and improve the CNN model accuracy Transfer Learning (TL) is used. The analysis is done by training, validating, and testing data. Depending upon the analysis of data by applying the CNN algorithm pathosis is measured. Deep Learning, unlocked through information integration and advanced digital communication networks, has the potential to improve clinical workflow efficiency, and diagnostic quality, and ultimately create personalized diagnoses and treatment plans for patients. This review describes clinical perspectives and discusses the statistical methods, clinical applications, potential obstacles, and future directions of medical pathology using AI and DL.