

Application of hybrid Vision Transformer and LSTM model in predicting circumferential contraction timing from cardiovascular image sequences

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Abstract: This topic focuses on applying a hybrid model combining Vision Transformer (ViT) and Long Short-Term Memory (LSTM) to predict the timing of contraction in the cardiovascular process. The context of the topic arises from the practical need for early detection of abnormal signs of cardiovascular contraction, aiming to contribute to improving the quality of diagnosis and treatment. The research method applies both theory and experimentation to build and train the prediction system. The objective is to determine the model's accuracy in analyzing cardiovascular image sequences and effectively predicting the contraction timing. The expected results from this topic not only contribute to the research field but also aim to develop highly applicable medical support technology.

Keywords: Vision Transformer, LSTM, Contraction prediction, Cardiovascular image sequence, Experimental study