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Title	Temporal Fusion Transformer for forecasting vital sign trajectories in intensive care patients
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Abstract

The deterioration of a patient's condition is usually preceded by several hours of abnormal physiology as indicated by the patient's vital signs. Estimating the expected course of a patient's future vital signs can allow clinicians to determine the risk of physiologic deterioration. Multi-horizon forecasting provides the ability to estimate the trajectory of vital signs at multiple time steps in advance, allowing clinicians to optimize an appropriate treatment plan for the patient. In this study, Temporal Fusion Transformer (TFT) was applied to forecast quantiles of future vital signs based on time-varying measurements of past vital signs. We developed our model using the Songklanagarind critical care dataset, which includes vital sign measurements from 140 patients. Results suggest that TFT can capture the temporal dynamics of vital signs and can potentially be used to detect irregular patterns in vital sign time series.