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## Predicting Mortality and Length of Stay Using Machine Learning on the ICU Dataset

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**Abstract**: As we know that accurate prediction of patient in Intensive Care Units is vital for optimizing clinical decision-making and resource allocation. Efficient management of Intensive Care Units (ICUs) is critical for optimizing patient outcomes and resource allocation. This study explores the application of machine learning (ML) techniques to predict patient mortality and length of stay (LOS) using ICU patient dataset. By employing algorithms such as Random Forest (RF), Logistic Regression (LR), XGBoost and Bidirectional LSTM, we aim to enhance predictive accuracy over traditional scoring systems like APACHE II. Our findings indicate that ML models, particularly RF and LSTM, outperform conventional methods, offering valuable tools for clinical decision-making and hospital management.

Keywords: Machine Learning, ICU, Mortality Prediction, Length of Stay, Random Forest, Bidirectional LSTM., XGBoost



