**Approach: Identify the high-level technical approaches for the project (e.g., what algorithms to use or pipelines to use). Identify clearly the success metric that you would like to use (e.g., AUC, accuracy, recall, speedup in running time).**

We will use supervised machine learning approaches for ICU readmission prediction. Based on longitudinal clinical data from the MIMIC-III we will predict the ICU readmission of patients within 30 days of their discharge. We will incorporate multiple types of embeddings and compare them.

We will use machine learning techniques such as Recurrent Neural Networks (RNN) with Long Short-Term Memory (LSTM).

We will implement different types of embeddings such as Word2Vec, Bidirectional Encoder Representations for Transformers (BERT), Global Vectors (GloVe) etc.

We will use Area Under the Curve and sensitivity as success metric.