

1144-68-24

**Namratha Mohan\*** (namrathmohan@gmail.com) and **Thanos Gentimis** (genitmisth@gmail.com). *Predicting Post-Procedural Complications using Neural Networks*. Preliminary report.

As a core component, this paper involves analysis and prediction on large data sets through Machine Learning algorithms. The input dataset contains structured data extracted from MIMIC III, a large Health Record database of more than 40,000 patients. The main question was to predict if a patient will have complications during certain specified procedures performed in the hospital. These events are denoted by the icd9 code 996 in the individuals health record. The output of our predictive model is a binary variable which outputs the value 1 if the patient is diagnosed with the specific complication or 0 if the patient is not. Our prediction algorithm is based on a Neural Network architecture, with a 90%-10% training-testing ratio. Our preliminary analysis yielded a prediction accuracy above 80%, outperforming various multi-linear models. (Received July 05, 2018)