**MScBMI 33200 – Machine Learning for Biomedical Informatics**

**Assignment IV**

**<Insert NAME>**

Directions:

1. Fill out below information (tables and methods)
2. Submit this document along with your code in an HTML/PDF format

Gusto study

Using the training datasets, create the following models:

1. GLM model: This model utilizes all features to predict 30-day mortality in a logistic regression framework.
2. Ridge Regression model: This model utilizes all features to predict 30-day mortality in a logistic regression framework with regularization.
3. ANN model: This model utilizes all features to predict 30-day mortality using an artificial neural network. Feature engineering steps should use normalization/standardization of continuous variables.
4. Random Forest model: This model utilizes all features to predict 30-day mortality using a random forest.
5. GBM model: This model utilizes all features to predict 30-day mortality using a gradient boosted machine.
6. SVM model: This model utilizes all features to predict 30-day mortality using a support vector machine.

Utilize a five-fold cross-validation technique to build your model.

Calculate AUC on the test dataset. Fill out the following Table.

|  |  |
| --- | --- |
|  | AUC (95% CI) |
| Logistic Regression |  |
| Ridge Regression |  |
| ANN |  |
| Random Forest |  |
| GBM Model |  |
| SVM |  |

Insert details on the models that were developed in the space given below.

Methods: