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# Final Project

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CSCE 421 - 500 Spring 2023 - Mortazavi

## 1 Due Date

Your submission, which is your code and your written write up, will be due on **Friday, May 5, at 11:59 PM. No late submissions will be accepted.** You will submit your trained results to Kaggle. You will, on canvas, turn in a zip file, named *firstname\_lastname\_UIN\_finalproject.zip* which will have your python code, your pdf of your write up, and any other supplementary information we need to evaluate your result.

## 2 Dataset

The Template Write Up Document has a link to the dataset. You will be developing a machine learning model for predicting in-hospital mortality from patients within the ICU. You will have nearly 2,000 admissions of patients. You will use data from the first 48-hours of their admissions to develop a model to predict mortality within the rest of the admission or discharge.

## 3 Modeling

You have to create a model that predicts the probability of in-hospital mortality given the input data. There are no requirements for the type of model you use. We have provided template code for you to begin with. You should start here and are expected to meet the function requirements provided so that your solution can be submitted onto our Kaggle competition. You are looking to beat my AUC-ROC score. You can view it on the Leaderboard on the Kaggle page. The submission to beat is "Ryan's Submission." If you beat my submission and we can reproduce your results using your saved model, you will receive full credit for the model performance section.

## 4 Report Writing

In addition to your code you will write a conference-style report. This written report will follow the template provided. You will be required, in latex, to write a full description of the problem being studied, important references you found helpful in developing your submission, and a clear description of your implementation and experimentation - aside from the KAGGLE results, this description is how you provide confidence that you believe you implemented the model with high accuracy and that it will perform generally across any held out test set we apply it to.

### 4.1 Submission Process

Please report your project in detail, including your data preprocessing, model struction, hyperparameter tuning, and model performance evaluation. Your submission to Canvas should include your code, your Latex and PDF of the report, and any additional supplementary material that is necessary.