Course Project

625.661 Statistical Models and Regression

Overview

After you complete Modules 1-10, you have learned the major methods for regression model-building process depicted in Figure 1.8, page 10 of the textbook. Regression model-building is a process that requires a lot of careful thoughts and evaluations during the building process. In this course project, you are requested to find the "best" regression model for model fitting and model prediction for a dataset you select from the list provided below.

Objectives

After completion of this project, you will be able to:

- Draw out a plan and process for statistical model building.
- Develop statistical methods for regression model analysis following statistical principle.
- Perform statistical modeling, model diagnostics and validation.
- Identify and apply appropriate analysis methods with statistical modeling to real-world applications.

Project Tasks

First, you either select one dataset from the following two tables in the Textbook:

Table B.1 (page 554)

Table B.12 (page 565)

or you use your own data. If you choose your own data, please make sure to describe in detail your own data source.

All the variables listed in your selected table need to be considered in your regression model-building. Your final model may eliminate some of the regressors with proper justification. You can check out the source information regarding the dataset from literature, if any, to familiarize yourself with the background of the problem and the dataset.

In the next steps, you need to follow the bullet points drawn out in the objectives section above.

Finally, you need to write a report that describes how you build the final models in detail and how to assess the ability of your model for prediction. The details should include your thought process, analysis results, and conclusions.

Submission

Your project report will be due **by the end of Day 5 right after Module 14**. The report paper should be submitted in Blackboard as a Word or PDF document.

Plagiarism

Plagiarism is defined as taking the words, ideas or thoughts of another and representing them as one's own. If you use the ideas of another, provide a complete citation in the source work; if you use the words of another, present the words in the correct quotation notation (indentation or enclosed in quotation marks, as appropriate) and include a complete citation to the source.