

Module 8: Model Diagnostics and Remedial Measures in Multiple Linear Regression

Live Sessions
July 29: 9:00 - 9:50 am EDT (Blue), 10:00 - 10:50 am EDT (Orange)

Office Hours
Tue & Thu: 9:00 - 9:50 am EDT (Blue), 10:00 - 10:50 am EDT (Orange).



Dr. Woo
yjw4b@virginia.edu

MODULE WELCOME

A residual is the difference between the predicted value of the response variable and the actual value of the response variable. In modules 3 and 4, you used residual plots to assess whether the assumptions in building a regression model are met.

In this module, you will learn more about residuals and how they are used to assess outlying data points. Outlying data points are potentially influential. A data point is influential if its presence, or absence, significantly alters the estimated regression coefficients and the predictive ability of the model. In this module, you will also learn how to evaluate the effect these outliers have on estimating regression coefficients and making predictions.

ESSENTIAL QUESTIONS

- What are some of the drawbacks in using residuals to detect outliers?*
- What are the various scaled residuals that could be used to detect outliers and how are they improvements over residuals?*
- How do we detect data points that unduly influence the regression model?*

LEARNING OBJECTIVES

- 1
- Assess the appropriateness of your multiple linear regression model for data analysis, and apply remedial measures to address common problems in building regression models.

ASSIGNED RESOURCES

- Introduction to Linear Regression Analysis*, Sections 4.1 to 4.2.4, 4.3, 6.1 to 6.4
- Module 8 R tutorial, data set: bp.txt, and R-code: tutorial_module 8.R
- Module 8 guided question set and data set: nfl.txt

OPTIONAL

Visit the Module 8 Discussion Forum to communicate with one another about the assigned readings and resources or to discuss any other topics of interest with your instructor or fellow students.

 [Module 8 General Discussion](#)

MODULE OVERVIEW

-  [8.1: Introduction to the Lesson](#)
-  [8.2: Residual Analysis](#)
-  [8.3: Leverage and Measures of Influence](#)
-  [8.4: Recap of Module 8](#)
-  [8.5: R Tutorial for Module 8](#)
-  [8.6: Module 8 Live Session](#)