

M339 G: September 11th, 2024.

Multiple Linear Regression.

explanatory i.v.s

$$(X_1, X_2, \dots, X_p) = X$$

response i.v.

Y

Regression model:

$$Y = f(X) + \varepsilon$$

w/ X and ε *independent*

Multiple linear regression.

$$Y = \underbrace{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p}_{f(X)} + \varepsilon$$

With interaction terms.

$$\text{e.g., } Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_{12} X_1 X_2 + \varepsilon$$

interaction term