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Week 4 weekly writing assignment - Linear Regression

As an economics student, I have been exposed to linear regression dozens of times throughout taking courses at Michigan State. Most notably I remember covering it in several economics classes, most notably econometrics, as well as CMSE, PLS courses, and linear algebra. Learning to calculate a least squares regression slope by hand in linear algebra gave me an understanding of how least squares works, and how computers do it through matrix multiplication, yet learning applications of OLS in econometrics taught me the limitations of OLS as well as the other ways it be used in causal analysis (such as regression discontinuity and oaxaca decomposition). Using OLS on raw data doesn't give much evidence toward a causal relationship, as it is unclear in which direction the relationship works and difficult to eliminate confounding and unobserved variables, but it does model the relationship in more detail than a simple correlation coefficient.