**Lesson 02 Code Talk**

No unread replies. No replies.

Please post about what your experience has been in the workplace, or not, with linear regression. Respond to at least one peer.

During my time at General Electric Aviation we used to work with regressions mostly for thermodynamic data. Sometimes we will use a scatterplot matrix (and/or correlation plots) including the R^2 value to determine if some of the independent variables that were inputs for some of the real-time thermodynamic models we had were truly independent. The theoretical thermodynamic model does not take into account mechanical or other physical interactions that are happening that interconnect some of the thermodynamic properties (temperatures, pressures, flows, etc.) which in turn can create a distortion on the results given than one of the assumptions of the model was that each of the inputs were independent of each other. As we saw in class there are other (better) ways to determine collinearity (such as the variance inflation factor), but a correlation matrix with R^2 values was the main tool at that time.

Another way we used regression was to predict loss of efficiency of some of the engine components by using the historical data of a particular fleet of engines (same kind of turbofan) flying at the same conditions, this to determine if extensions of overhaul rework were applicable and/or how many cycles were left before reaching certain critical and safety milestones, in this case we were more interested in both R^2 and the RMSE as a measured of performance for the noted regressions and predicted values.