**Lesson 07 Code Talk**

In machine learning, it is easy to fit models, but more difficult to derive meaningful insight. Have you ever observed people making wrong conclusions from fitting models? Describe the consequences.

At my previous position one time we were working on a model to predict the failure of the High Pressure Compression system for a particular line of engines, and the team working on the prediction initially was using logistic regression based on sensor data and previous history for the fleet. The team working on this did not requested insights from the expert on the thermodynamics on that particular line of engines, and they did not perform data exploration to understand the phenomena better before trying to make predictions, then they did not realize there is a concept call EGT (Exhaust Gas Temperature) corner point. This EGT Corner point is the temperature in which the engine has to change its behavior in order to prevent overheating of the components. Then the engine might behave differently based on the corner point, unfortunate the corner point is not a fix temperature, it depends on many other factors (such number of cycles since new, etc.) and if you try to predict the failure of a component using just limited sensor data, the prediction might be complete off for those critical conditions.

Fortunately this was capture during one of the tech reviews for this condition, but at that point the team already spent a significant amount of effort and time working on this model. So this did not escalated to a safety concern for any of the models for the different fleets we had on service at the time, but gave us a clear warning on exploring the data before just fitting models and also obtaining input from subject expert matters if available.