LEARNER GRADE PREDICTION AND INTERVENTION PROJECT

WILL I SUCCEED?

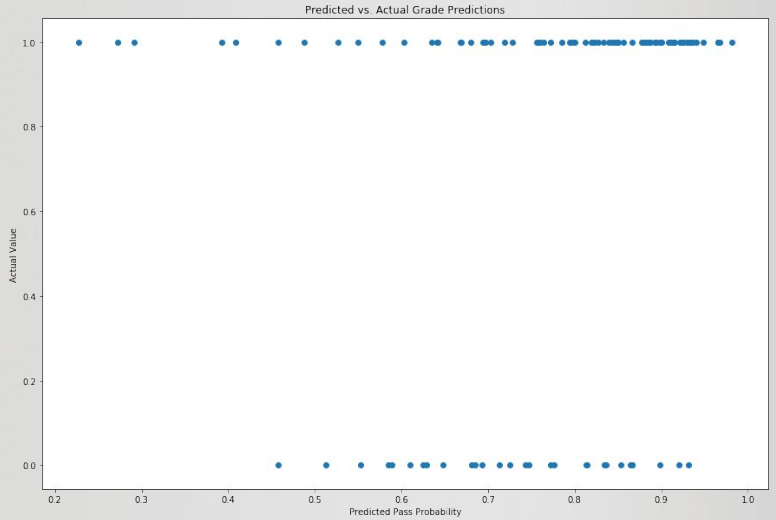
A question that many learner will ask as they start a new course. They following investigation aims to inform that question and empower stakeholders.

1. INTERVENTION MODEL

Let’s look at extracurricular and socioeconomic factors first

LOGISTIC REGRESSION AND RANDOM FOREST INVESTIGATION

The probability prediction of the logistic regression model struggled to predict which students would pass based on a 50% (10/20) threshold.



FEATURE IMPORTANCES AND ODDS OF SUCCESS

- Number of absences

(logistic odds are 1.71 with only two absences)

- Student health

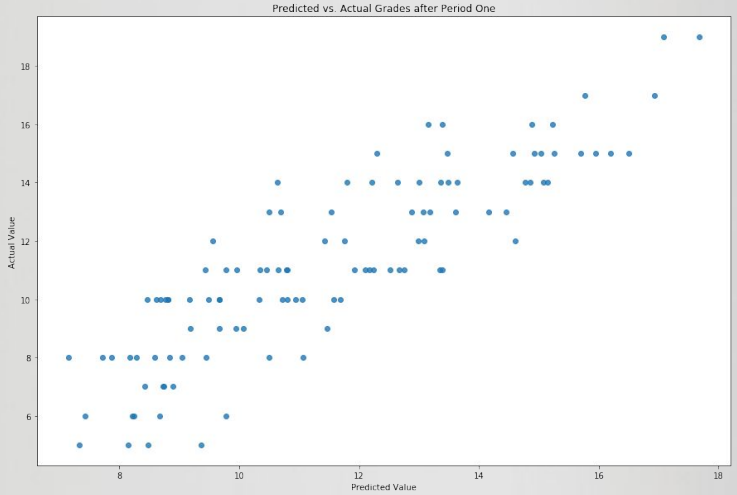
(feature importance 0.014 and logistic odds are 1.54)

- Student weekday outings

(logistic odds are 1.67 with very few outings)

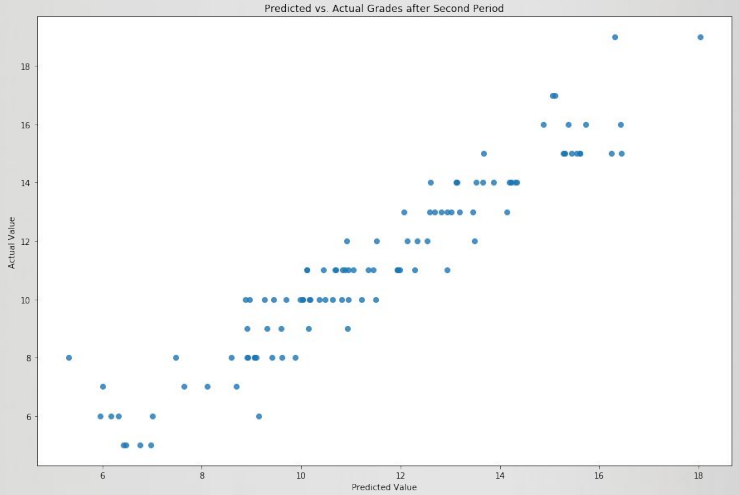
FIRST SEMESTER GRADE PREDICTION

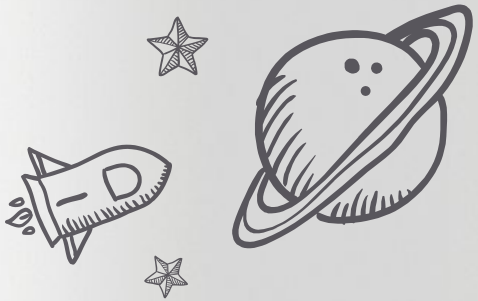
The final grade predictions are greatly improved by including the first semester grades into a Random Forest Regression model.



SECOND SEMESTER GRADE PREDICTION

The final grade predictions are again improved by including the second semester grades.





SUPPORT

These models are designed as informative tools to empower professionals to make meaningful and timely interventions.