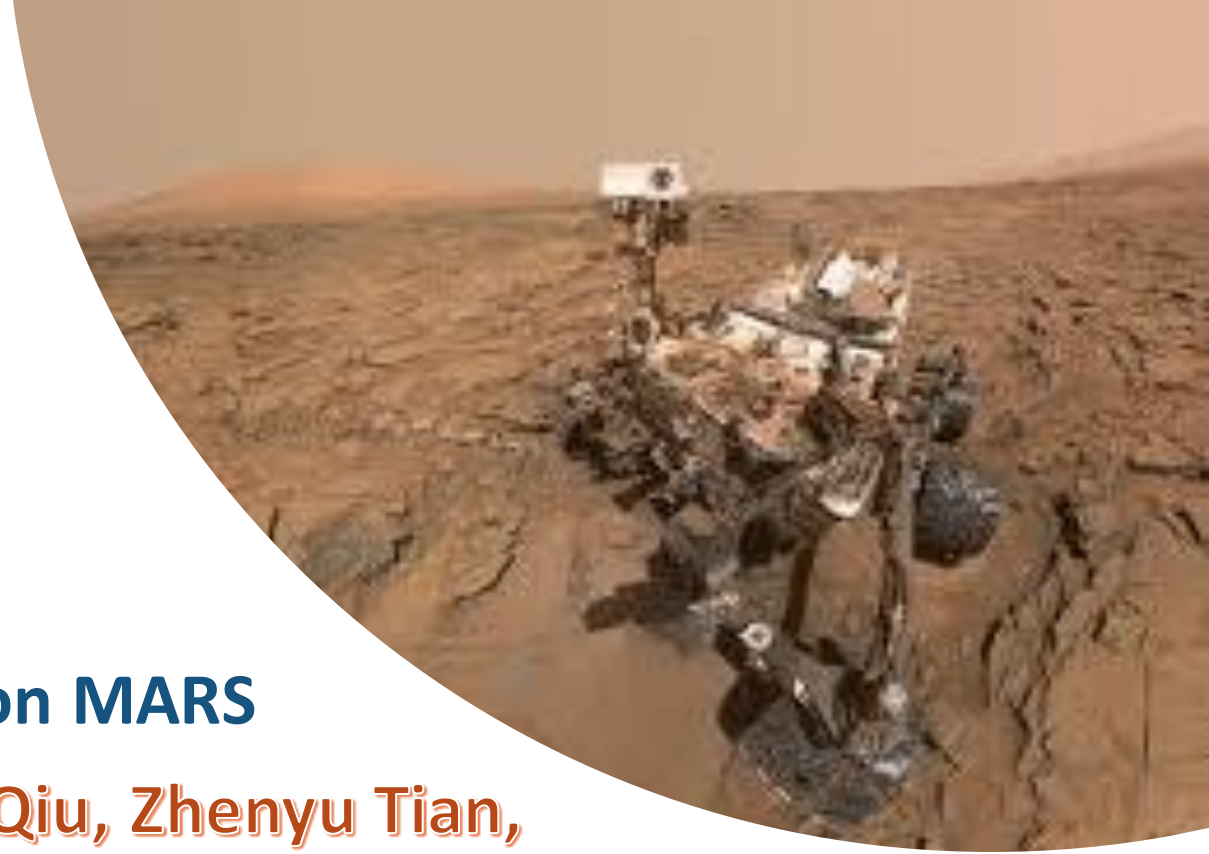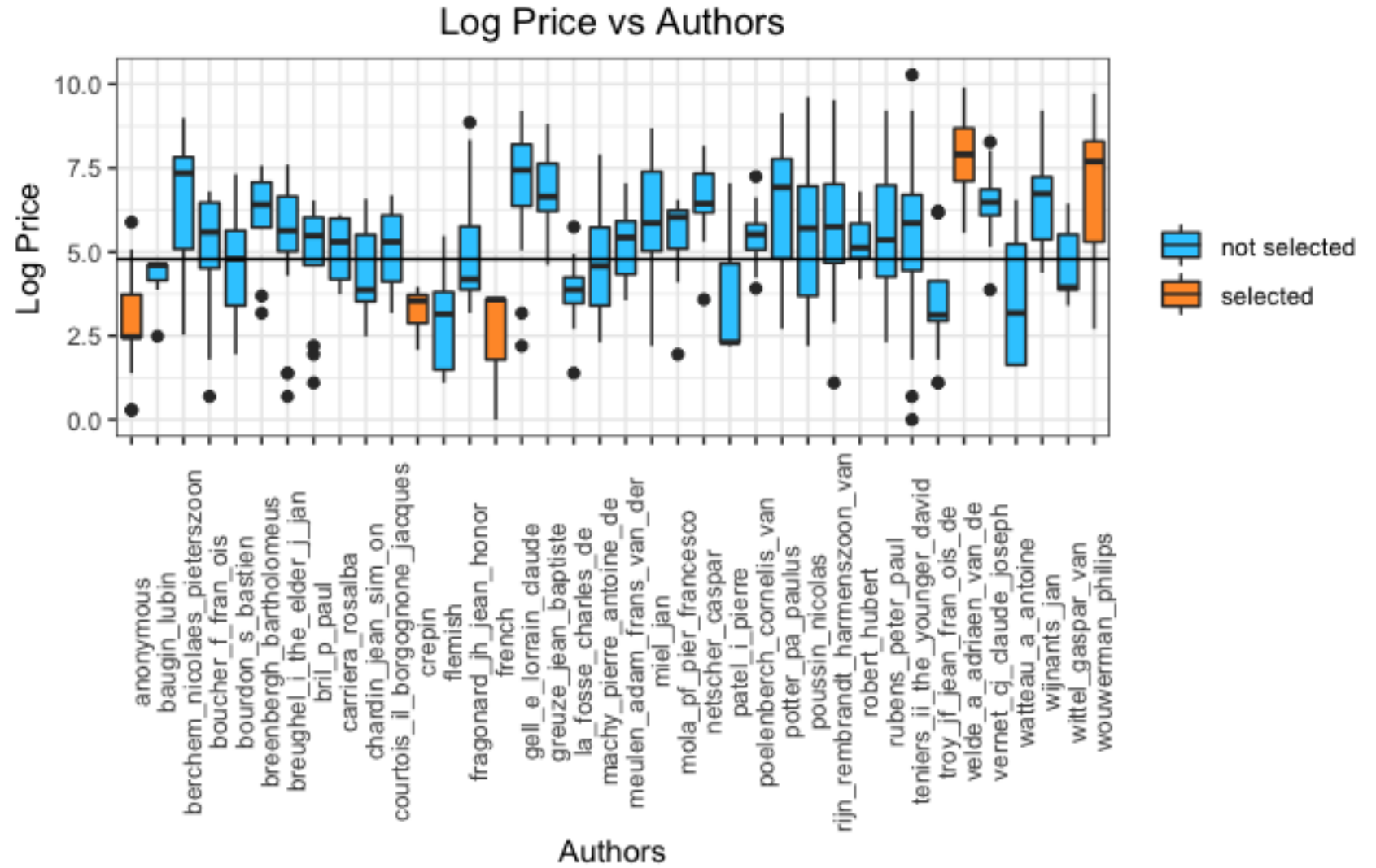**Group: Life on MARS**

Martians: Heather Qiu, Zhenyu Tian, Morris Greenberg, Daniel Deng

Forecasting Art Prices and Understanding its Pricing Mechanisms
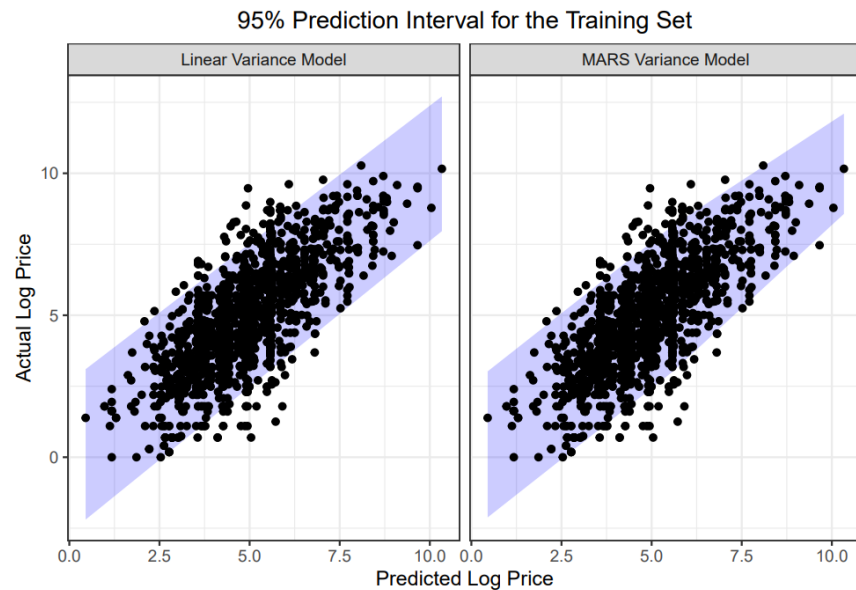
Most Interesting Graphic

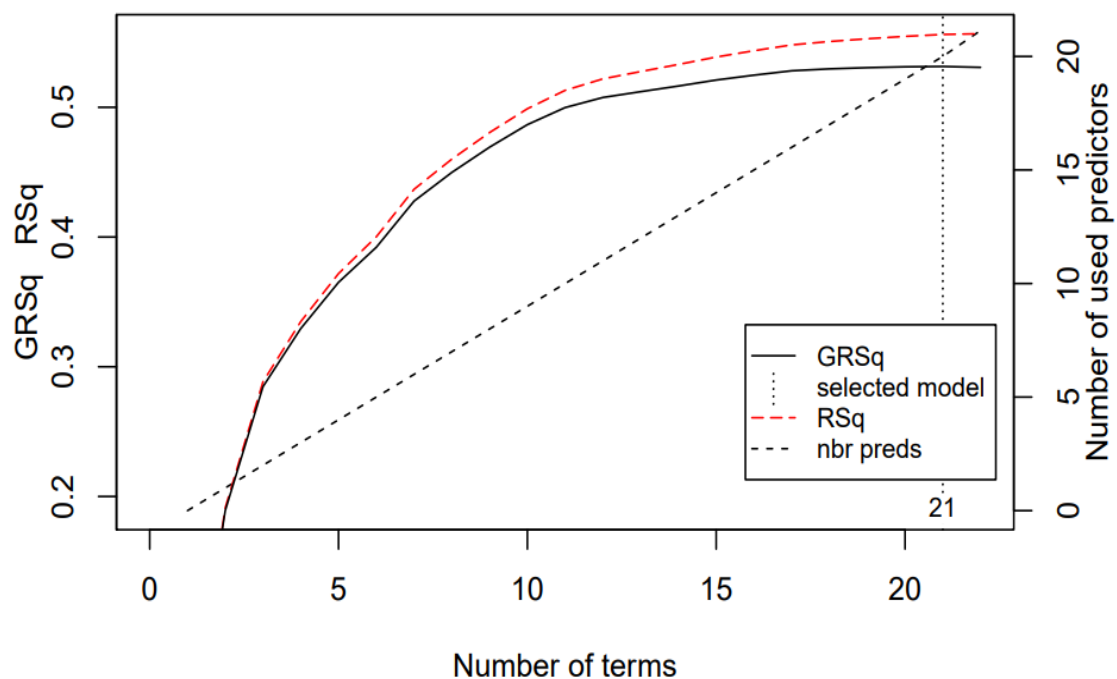# Best Model

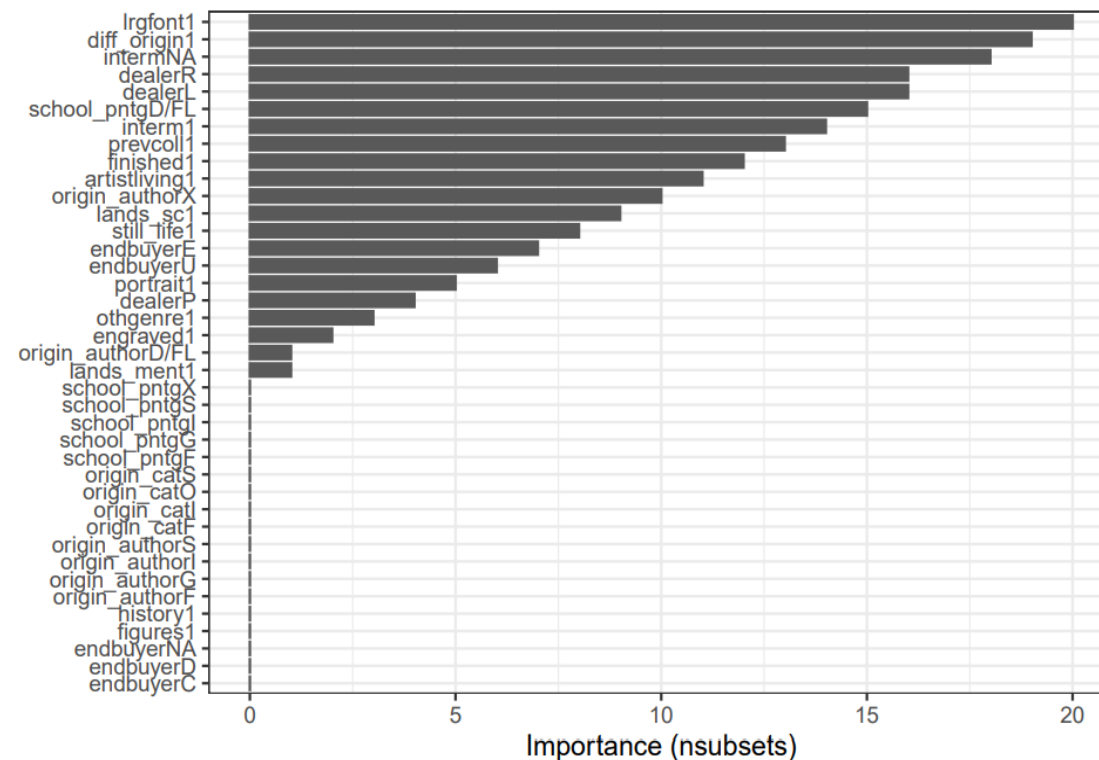95% Prediction Interval for the Training Set

- Multivariate Adaptive Regression Splines (MARS)
  - Advantages:
    - Minimal user need to execute feature engineering to specify nonlinearities and interactions
    - Performs fature selection
    - Methodologies for coverage exist in the earth package
    - Interpretable
  - Disadvantages:
    - Will not produce as good of a fit as gradient boosted decision trees
    - No hypothesis tests for significance of variables
    - Prediction function is not differentiable

Model Insights

Best Investments

The Vegetable Market in Amsterdam

Expected Profit:

7.3k

Ruined Animals

Expected Profit:

13.5k

Deer Chasing

Expected Profit:

16.7k