Running script Forest...

Random Seed: 821436

-------------- Model Characteristics ---------------

Number of Trees 100

Leaf Size 5

Tree Depth Range 26-43

Mean Tree Depth 35

% of Training Available per Tree 100

Number of Randomly Sampled Variables 34

% of Training Data Excluded for Validation 10

----------- Model Out of Bag Errors ------------

Number of Trees 50 100

MSE 0.004 0.004

% of variation explained -0.344 2.993

---------- Top Variable Importance -----------

|  |  |  |
| --- | --- | --- |
| Variable | Importance | % |
| Car truck or van Carpooled In 5 or 6 person carpool | 0.46 | 4 |
| Car truck or van Carpooled In 4 person carpool | 0.4 | 4 |
| 10 to 14 years White | 0.36 | 3 |
| Car truck or van Carpooled In 3 person carpool | 0.28 | 3 |
| 20 to 24 years Native | 0.27 | 3 |
| 15 to 17 years Asian | 0.25 | 2 |
| 85 years and over White | 0.24 | 2 |
| 35 to 44 years Black | 0.22 | 2 |
| 55 to 64 years Black | 0.22 | 2 |
| 1 to 9 years Black | 0.22 | 2 |
| 30 to 34 years Black | 0.18 | 2 |
| 35 to 44 years Asian | 0.18 | 2 |
| 65 to 74 years Black | 0.18 | 2 |
| Bar/Restaurant Limits | 0.17 | 2 |
| 35 to 44 years White | 0.16 | 2 |
| Primary Election Postponement | 0.15 | 1 |
| Family households Married couple family | 0.15 | 1 |
| Family households Other family Male householder no wife present | 0.15 | 1 |
| 45 to 54 years Asian | 0.15 | 1 |
| stay at home order | 0.15 | 1 |

----- Training Data: Regression Diagnostics ------

R-Squared 0.911

p-value 0.000

Standard Error 0.004

\*Predictions for the data used to train the model compared to the observed categories for those features

---- Validation Data: Regression Diagnostics -----

R-Squared 0.123

p-value 0.000

Standard Error 0.015

\*Predictions for the test data (excluded from model training) compared to the observed values for those test features

Median R2 0.123 was approximately reached at seed 288572

------------------ Explanatory Variable Range Diagnostics ------------------

Training Validation Training Validation

Variable Minimum Maximum Minimum Maximum Share(a) Share(b)

pop\_density 0.00 73032.20 0.20 38512.30 1.00 0.53\*

AQI1 0.00 149.00 0.00 49.00 1.00 0.33\*

AR1 0.00 19.05 0.00 17.80 1.00 0.93\*

AR2 0.00 15.05 0.00 12.31 1.00 0.82\*

AR3 0.00 17.25 0.00 14.92 1.00 0.87\*

AR4 0.00 15.43 0.75 6.58 1.00 0.38\*

AR5 0.00 33.83 0.00 10.50 1.00 0.31\*

AR6 0.00 40.05 0.00 24.49 1.00 0.61\*

AR7 0.00 21.30 0.12 17.80 1.00 0.83\*

AR8 0.00 37.50 0.00 14.78 1.00 0.39\*

AR9 0.00 27.59 3.20 23.97 1.00 0.75\*

AR10 0.00 49.26 6.28 20.95 1.00 0.30\*

AR11 2.61 112.50 9.38 37.61 1.00 0.26\*

AR12 0.00 34.43 3.24 23.93 1.00 0.60\*

AR13 0.00 20.77 1.03 21.24 0.98\* 0.95\*

AR14 0.00 8.93 0.00 6.52 1.00 0.73\*

AR15 0.00 65.99 0.00 31.46 1.00 0.48\*

AR16 0.00 48.01 0.00 32.68 1.00 0.68\*

AR17 0.00 54.78 0.00 32.14 1.00 0.59\*

AR18 0.00 27.77 0.00 17.59 1.00 0.63\*

AR19 0.00 49.53 0.00 13.91 1.00 0.28\*

AR20 0.00 109.38 0.00 30.76 1.00 0.28\*

AR21 0.00 52.34 0.00 28.73 1.00 0.55\*

AR22 0.00 58.84 0.00 26.88 1.00 0.46\*

AR23 0.00 75.42 0.00 40.00 1.00 0.53\*

AR24 0.00 76.40 0.00 45.82 1.00 0.60\*

AR25 0.00 84.24 0.00 41.02 1.00 0.49\*

AR26 0.00 47.01 0.00 29.19 1.00 0.62\*

AR27 0.00 33.09 0.00 11.36 1.00 0.34\*

AR28 0.00 7.88 0.00 3.88 1.00 0.49\*

AR29 0.00 326.65 0.00 91.04 1.00 0.28\*

AR30 0.00 287.15 0.00 91.27 1.00 0.32\*

AR31 0.00 271.47 0.00 73.11 1.00 0.27\*

AR32 0.00 145.45 0.00 40.05 1.00 0.28\*

AR33 0.00 88.40 0.00 22.82 1.00 0.26\*

AR34 0.00 189.97 0.00 63.80 1.00 0.34\*

AR35 0.00 204.39 0.00 76.37 1.00 0.37\*

AR36 0.00 154.86 0.00 51.46 1.00 0.33\*

AR37 0.00 216.93 0.00 72.41 1.00 0.33\*

AR38 0.00 231.97 0.00 83.82 1.00 0.36\*

AR39 0.00 209.40 0.00 61.93 1.00 0.30\*

AR40 0.00 86.52 0.00 29.80 1.00 0.34\*

AR41 0.00 30.09 0.00 18.39 1.00 0.61\*

AR42 0.00 5.11 0.00 1.40 1.00 0.27\*

AR43 0.00 7.33 0.00 1.99 1.00 0.27\*

AR44 0.00 7.65 0.00 1.73 1.00 0.23\*

AR45 0.00 8.71 0.00 1.90 1.00 0.22\*

AR46 0.00 5.33 0.00 1.13 1.00 0.21\*

AR47 0.00 7.65 0.00 2.17 1.00 0.28\*

AR48 0.00 18.25 0.00 5.58 1.00 0.31\*

AR49 0.00 11.66 0.00 2.50 1.00 0.21\*

AR50 0.00 11.42 0.00 2.25 1.00 0.20\*

AR51 0.00 22.66 0.00 4.54 1.00 0.20\*

AR52 0.00 43.64 0.00 4.70 1.00 0.11\*

AR53 0.00 75.00 0.00 3.67 1.00 0.05\*

AR54 0.00 22.61 0.00 2.45 1.00 0.11\*

AR55 0.00 12.56 0.00 1.33 1.00 0.11\*

AR56 0.00 7.00 0.00 0.38 1.00 0.05\*

AR57 0.00 25.00 0.00 15.01 1.00 0.60\*

AR58 0.00 25.49 0.00 8.36 1.00 0.33\*

AR59 0.00 19.37 0.00 13.96 1.00 0.72\*

AR60 0.00 35.04 0.00 5.16 1.00 0.15\*

AR61 0.00 15.90 0.00 4.78 1.00 0.30\*

AR62 0.00 27.67 0.00 6.84 1.00 0.25\*

AR63 0.00 36.99 0.00 17.80 1.00 0.48\*

AR64 0.00 20.00 0.00 9.82 1.00 0.49\*

AR65 0.00 31.03 0.00 19.03 1.00 0.61\*

AR66 0.00 28.92 0.00 10.82 1.00 0.37\*

AR67 0.00 30.70 0.00 10.47 1.00 0.34\*

AR68 0.00 18.18 0.00 11.04 1.00 0.61\*

AR69 0.00 8.39 0.00 10.37 0.81\* 1.24

AR70 0.00 8.93 0.00 2.50 1.00 0.28\*

AR71 0.00 3.76 0.00 2.01 1.00 0.54\*

AR72 0.00 3.76 0.00 2.01 1.00 0.54\*

AR73 0.00 47.12 0.00 8.15 1.00 0.17\*

AR74 0.00 59.19 0.00 17.10 1.00 0.29\*

AR75 0.16 165.52 0.46 45.17 1.00 0.27\*

AR76 0.00 67.08 1.23 25.31 1.00 0.36\*

AR77 0.00 28.21 1.03 15.60 1.00 0.52\*

T1 2.31 52.82 9.78 50.74 1.00 0.81\*

T2 1.22 48.58 6.05 46.95 1.00 0.86\*

T3 0.00 17.57 0.00 8.44 1.00 0.48\*

T4 0.00 8.05 0.00 6.81 1.00 0.84\*

T5 0.00 7.72 0.00 2.81 1.00 0.36\*

T6 0.00 2.56 0.00 1.62 1.00 0.63\*

T7 0.00 2.67 0.00 1.27 1.00 0.48\*

T8 0.00 2.23 0.00 0.83 1.00 0.37\*

T9 0.00 0.96 0.00 0.47 1.00 0.49\*

T10 0.00 8.00 0.00 3.56 1.00 0.44\*

T11 0.00 37.14 0.08 19.12 1.00 0.51\*

T12 0.00 11.20 0.00 6.84 1.00 0.61\*

T13 0.00 19.72 0.00 11.01 1.00 0.56\*

H1 5.06 30.24 9.14 29.22 1.00 0.80\*

H2 0.00 9.29 0.38 4.07 1.00 0.40\*

H3 0.00 12.54 0.16 12.65 0.99\* 0.99\*

H4 2.54 45.33 4.74 21.41 1.00 0.39\*

H5 0.00 8.70 0.00 7.56 1.00 0.87\*

(a) % of overlap between the ranges of the training data and the input explanatory variable

(b) % of overlap between the ranges of the validation data and the training data

\* Data ranges do not coincide. Training or validation is occurring with incomplete data.

+ Ranges of the training data and prediction data do not coincide and the tool is attempting to extrapolate.

Completed script Forest-based Classification and Regression...