

testing performance package

Ben Anderson

25/04/2022

```
summary(mtcars)
```

```
##           mpg           cyl           disp           hp
##  Min.      :10.40   Min.      :4.000   Min.       : 71.1   Min.       : 52.0
## 1st Qu.:15.43   1st Qu.:4.000   1st Qu.:120.8   1st Qu.: 96.5
## Median :19.20   Median :6.000   Median :196.3   Median :123.0
## Mean   :20.09   Mean   :6.188   Mean   :230.7   Mean   :146.7
## 3rd Qu.:22.80   3rd Qu.:8.000   3rd Qu.:326.0   3rd Qu.:180.0
## Max.    :33.90   Max.    :8.000   Max.    :472.0   Max.    :335.0
##           drat           wt           qsec           vs
##  Min.      :2.760   Min.      :1.513   Min.       :14.50   Min.       :0.0000
## 1st Qu.:3.080   1st Qu.:2.581   1st Qu.:16.89   1st Qu.:0.0000
## Median :3.695   Median :3.325   Median :17.71   Median :0.0000
## Mean   :3.597   Mean   :3.217   Mean   :17.85   Mean   :0.4375
## 3rd Qu.:3.920   3rd Qu.:3.610   3rd Qu.:18.90   3rd Qu.:1.0000
## Max.    :4.930   Max.    :5.424   Max.    :22.90   Max.    :1.0000
##           am           gear           carb
##  Min.      :0.0000   Min.      :3.000   Min.       :1.000
## 1st Qu.:0.0000   1st Qu.:3.000   1st Qu.:2.000
## Median :0.0000   Median :4.000   Median :2.000
## Mean   :0.4062   Mean   :3.688   Mean   :2.812
## 3rd Qu.:1.0000   3rd Qu.:4.000   3rd Qu.:4.000
## Max.    :1.0000   Max.    :5.000   Max.    :8.000
```

Make a model, any model

You can also embed plots, for example:

```
qsecModel <- lm(formula = qsec ~ carb + disp, data = mtcars)
```

```
qsecModel
```

```
##
## Call:
## lm(formula = qsec ~ carb + disp, data = mtcars)
##
## Coefficients:
## (Intercept)          carb          disp
##   20.324369    -0.635684    -0.002981
```

```
summary(qsecModel)
```

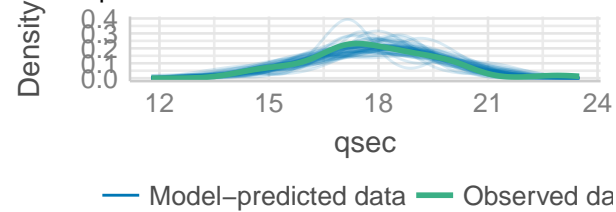
```
##
## Call:
## lm(formula = qsec ~ carb + disp, data = mtcars)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.2353 -0.8452 -0.1437  0.7470  4.2667
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 20.324369   0.575126  35.339  < 2e-16 ***
## carb        -0.635684   0.163300  -3.893  0.000535 ***
## disp        -0.002981   0.002128  -1.401  0.171917
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.349 on 29 degrees of freedom
## Multiple R-squared:  0.4667, Adjusted R-squared:  0.43
## F-statistic: 12.69 on 2 and 29 DF,  p-value: 0.0001098
```

Check performance

```
performance::check_model(qsecModel)
```

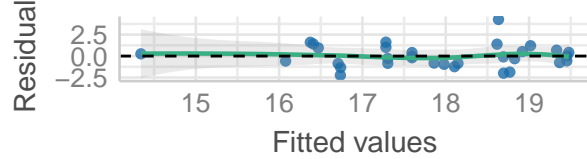
Posterior Predictive Check

Model-predicted lines should resemble observed data



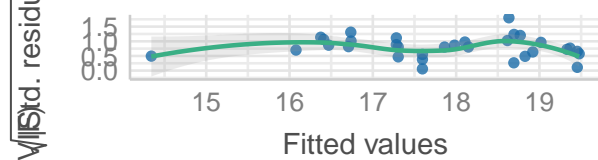
Linearity

Reference line should be flat and horizontal



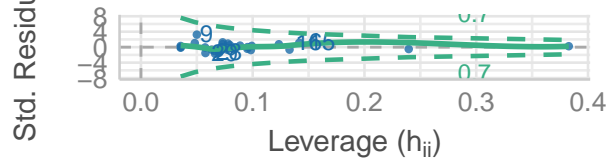
Homogeneity of Variance

Reference line should be flat and horizontal



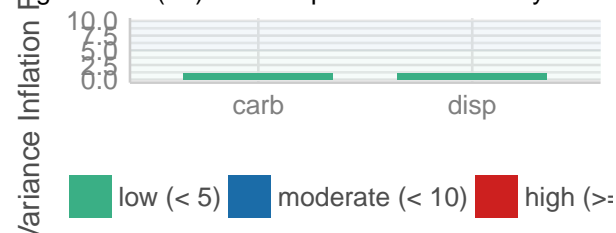
Influential Observations

Points should be inside the contour lines



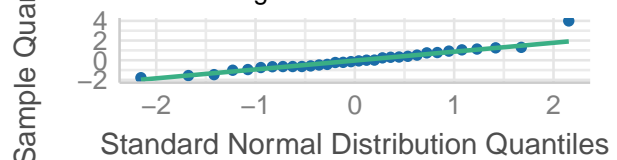
Collinearity

Higher bars (>5) indicate potential collinearity issue



Normality of Residuals

Points should fall along the line



Nice...

The end