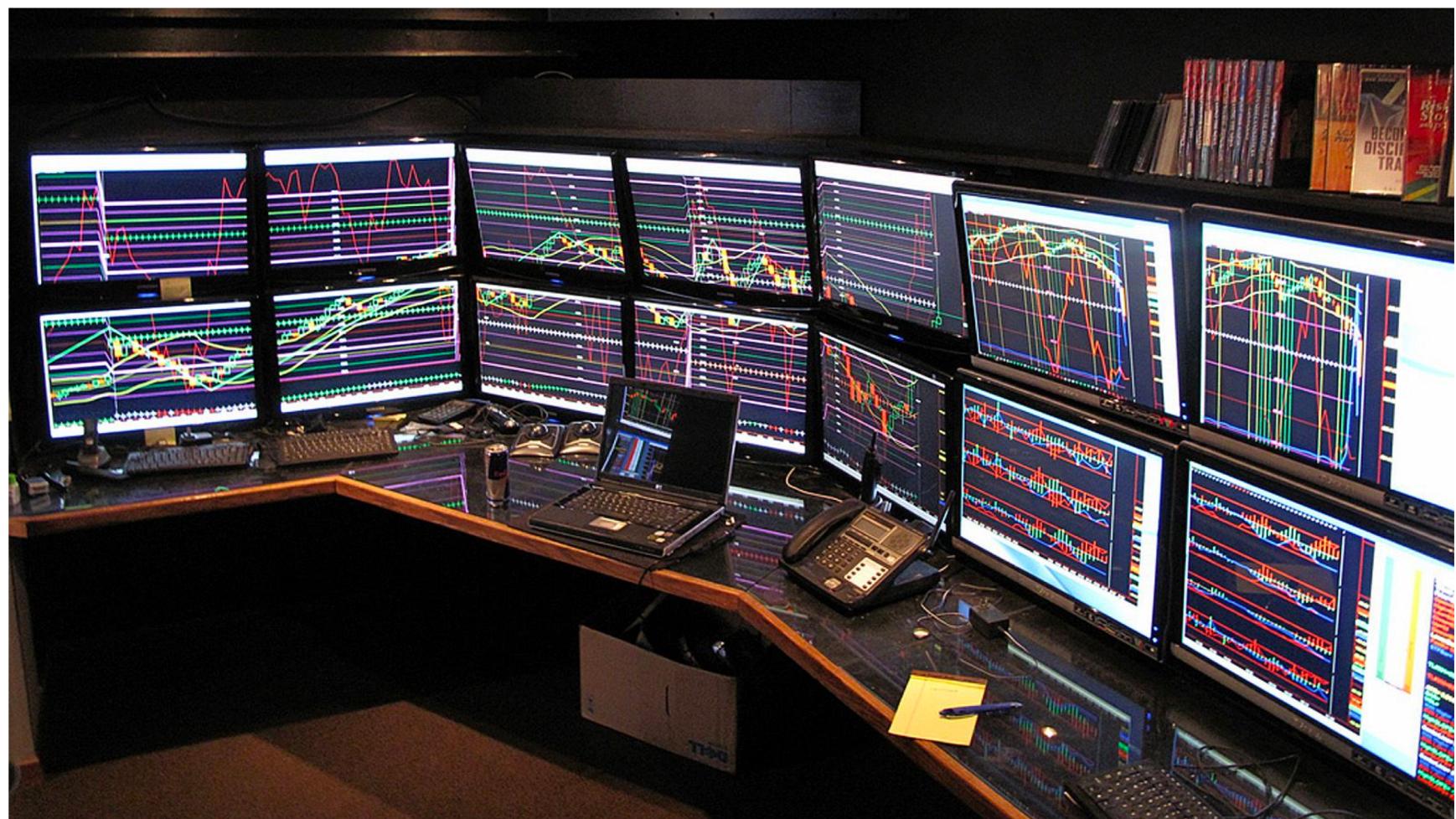


# Monitor Price Prediction

Rajkumar Katta







# Agenda

In response to demand for monitors, an electronics manufacturer has decided to manufacture their own line of monitors and would like to know:

1. What features have the greatest impact on monitor price
2. At what price point they should sell their monitor in order to be competitive and increase market share

# Methodology

Scraped data from over 2000 unique webpages from Newegg

Cleaned data → Approx. 800 unique records

- Some webpages weren't actually monitors
- Some were duplicates even though links were different
- Some were third party sellers who were missing key features

Categorical Features → One-hot encoding

- Panel
- Glare Screen

Numerical Features → Converting to numbers, scale, fill N/As etc.

# Features

## Refresh Rate

Model

Color

Curvature

## Panel Type

Backlit

Bezel

## Glare Screen

## Pixels

Connectors

View Angle

## Response Time

## Year Released

Aspect Ratio

Dimensions

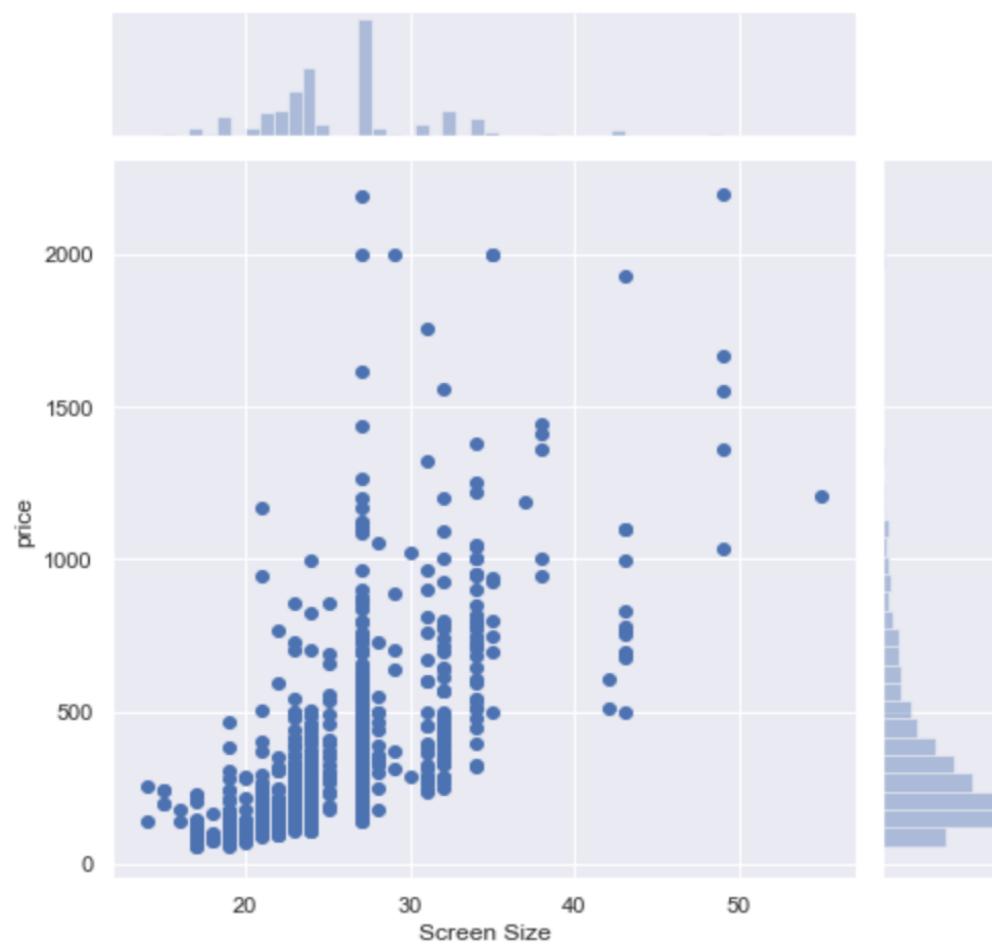
## Screen Size

Weight

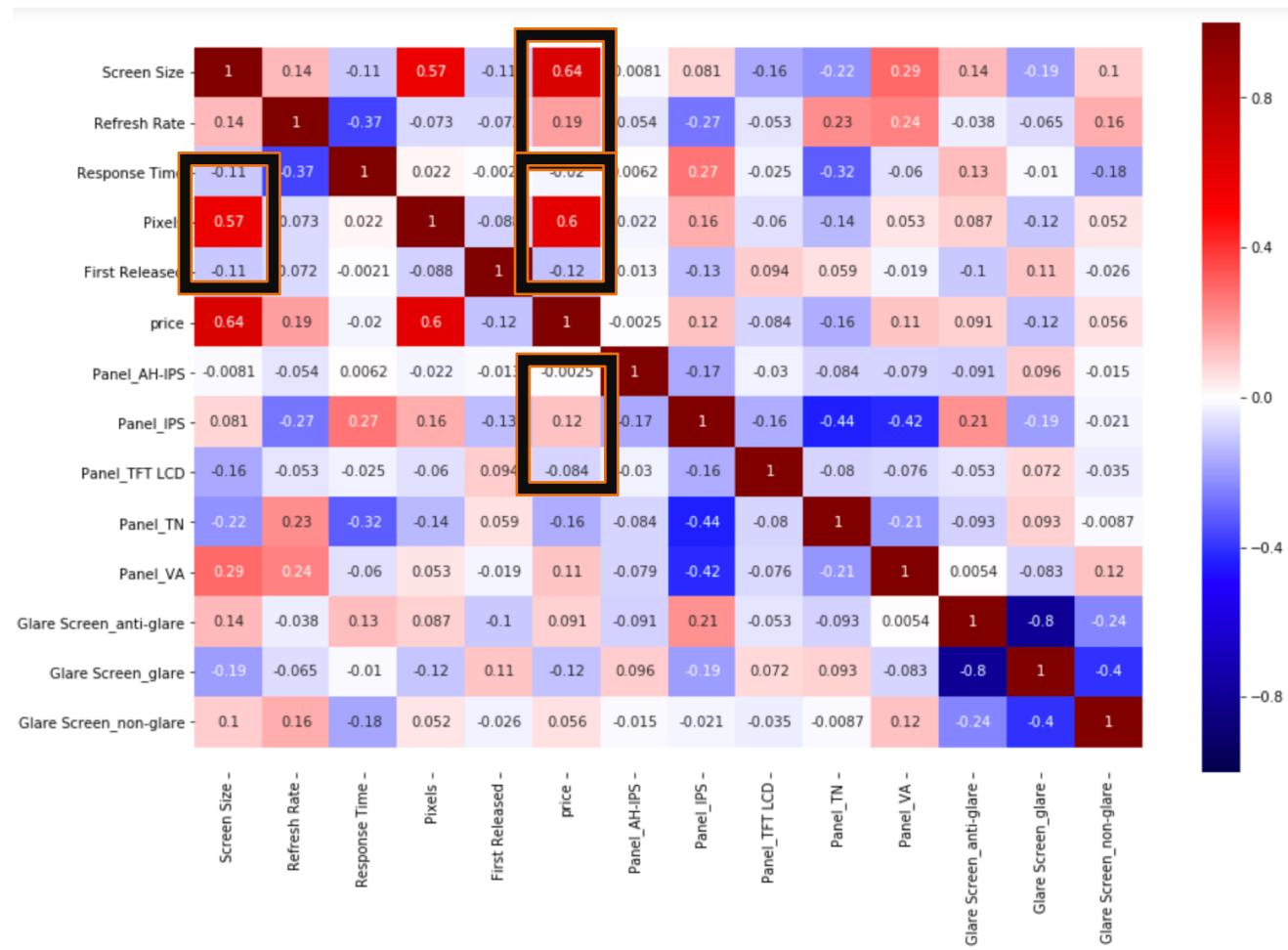
## Hypothesis

Monitor size has the biggest impact on the monitor price

# Screen Size Pair Plot



# Heat Map



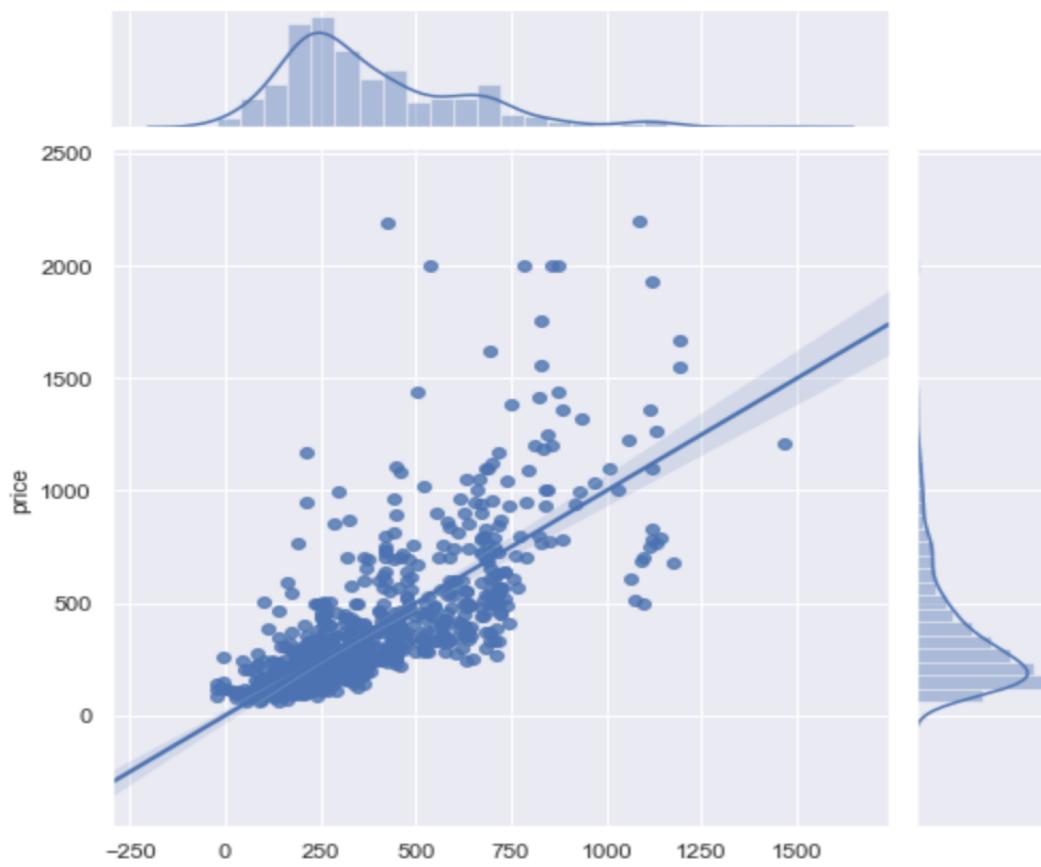
# Basic Linear Regression on Entire Data Set

Intercept: -651.57

- **Screen Size: 25.75**
- 'Refresh Rate: 2.08
- Response Time: 7.79
- Pixels: 5.71
- First Released: -0.013
- Panel\_AH-IPS: 15.23
- Panel\_IPS: 2.95
- Panel\_TFT LCD: 24.97
- Panel\_TN: -46.82
- Panel\_VA: -75.91
- Glare Screen\_anti-glare': 1.32
- Glare Screen\_glare: 10.99
- Glare Screen\_non-glare: -12.32

R Squared: 0.538

# Model Fit



# LASSO CV

Regularized  
& Scaled

Linear

Intercept: 374.04

- **Screen Size: 125.99**
- **Refresh Rate: 60.27**
- **Response Time: 18.28**
- **Pixels: 114.61**
- First Released: 0.0
- Panel\_AH-IPS: 1.16
- **Panel\_IPS: 9.00**
- **Panel\_TFT LCD: 3.82**
- Panel\_TN: -5.71
- **Panel\_VA: -17.34**
- Glare Screen\_anti-glare: -0.0
- Glare Screen\_glare: 1.02
- Glare Screen\_non-glare: -0.80

So how much is price explained by these selected features?

Score:

Training: 0.54

Test: 0.47

Other Metrics:

MAE on Test: \$141.56

Optimal Alpha: 4.50

# LASSO CV

Regularized  
& Scaled

Degree 2

## Score:

Training: 0.58

Test: 0.49

## Other Metrics:

MAE on Test: \$136.57

Optimal Alpha: 10.08

## Bottom Line

It looks like the training data is consistently yielding a lower score in the Lasso Model but the coefficients intuitively seem correct.

### **Recommendation:**

There is a pretty clear relationship between screen size and price but that alone wouldn't help in determining how to price a monitor.

The training and test data need to be equal for the most part. A recommendation cannot be made at this time, but we can begin seeking additional features and getting rid of outliers for better predictions.