

# Equity in King County

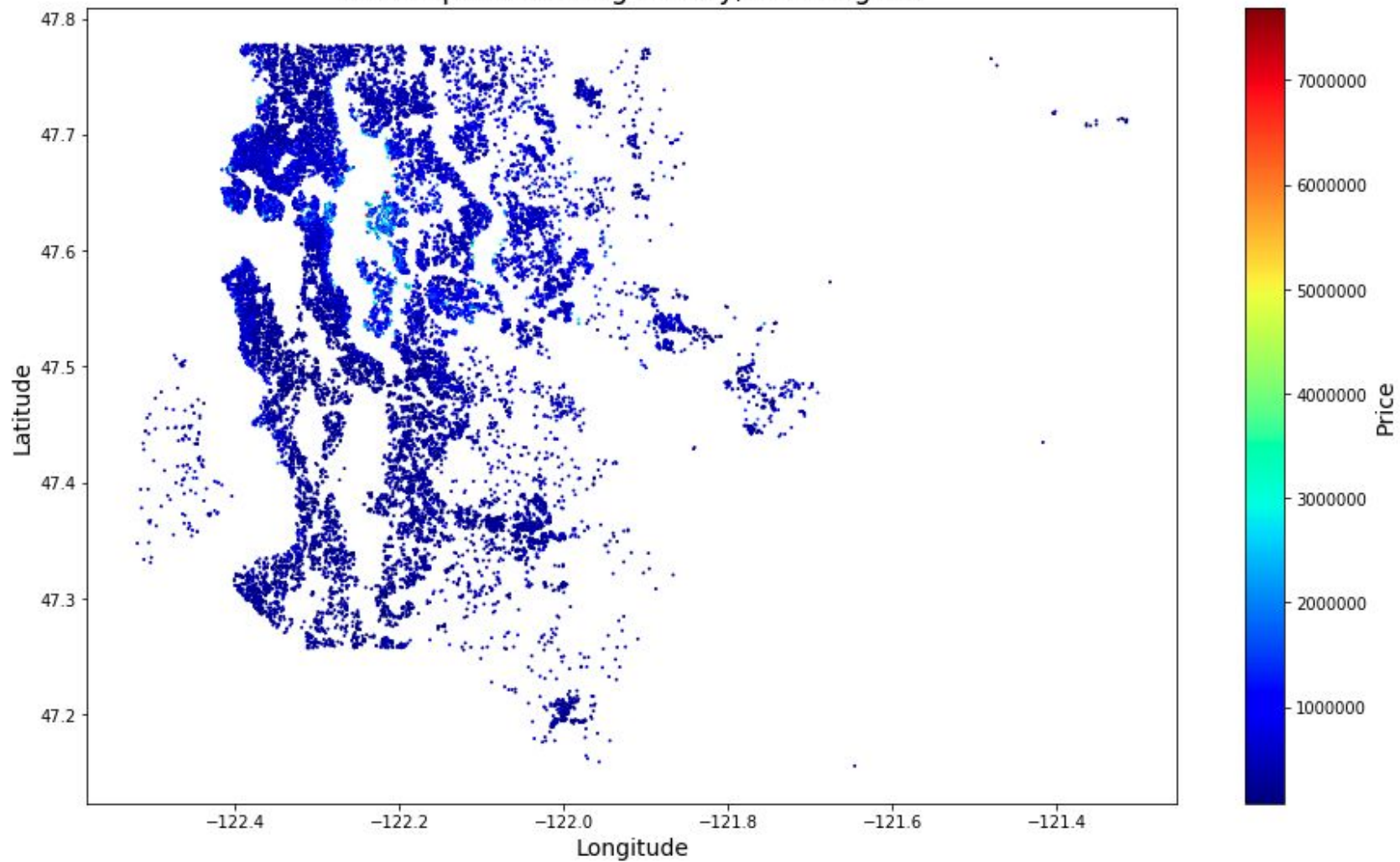
How to get it. How to keep it.

Alex H. Macy

# Washington State



House prices in King County, Washington

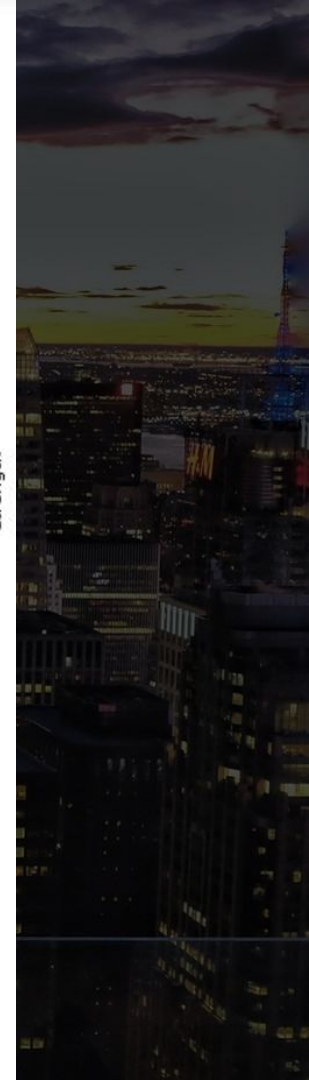
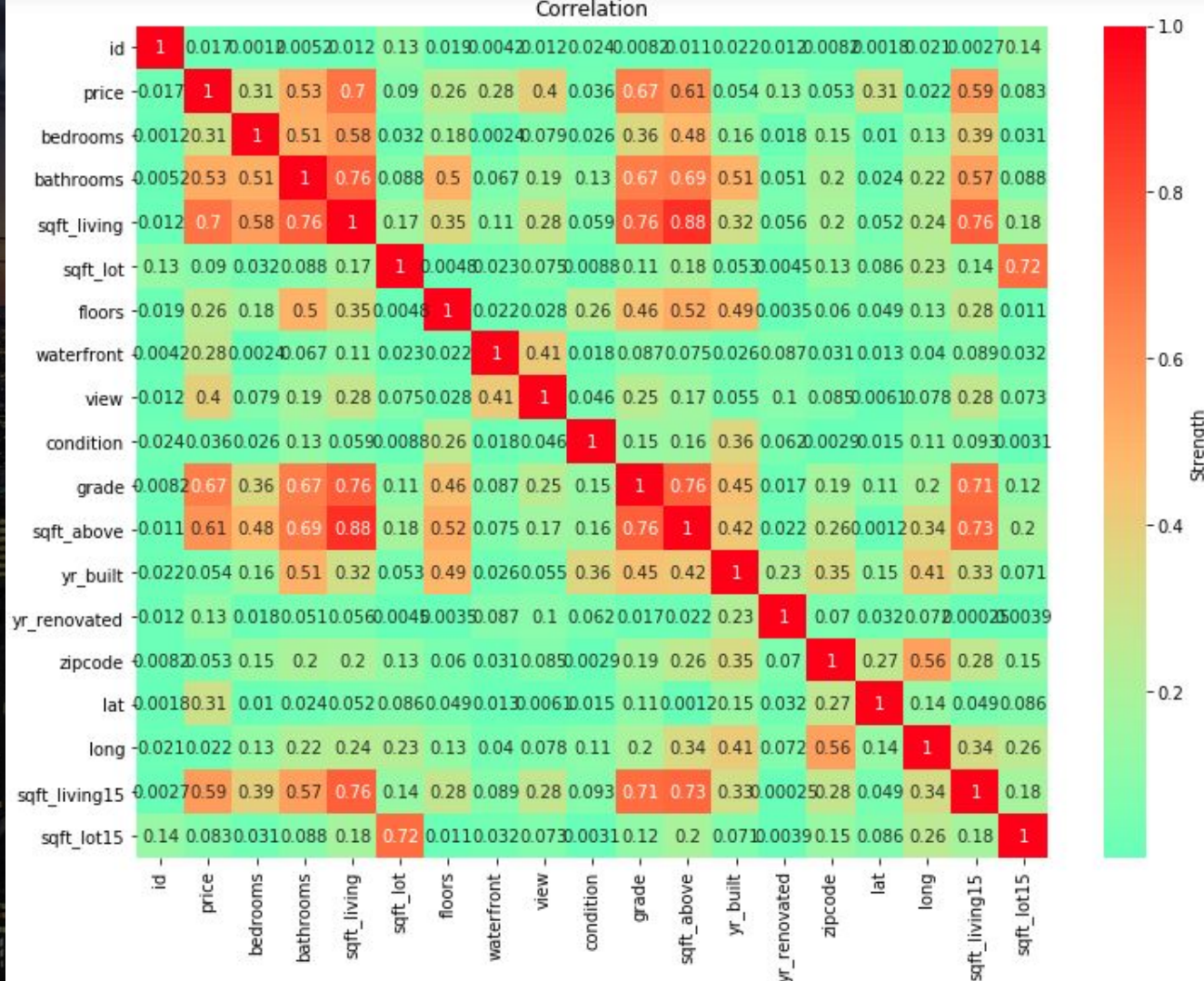


A close-up photograph of a person's hand holding a purple marker, drawing on a whiteboard. The background is blurred, showing some bokeh lights. The word "Trends" is overlaid in white text on the left side of the image.

# Trends

- Greater underlying reasons than the tech boom.
- Unique features operating together, shared amongst the housing market.





A close-up photograph of a person's hand, wearing a dark sleeve, pointing with their index finger at a document. A pen lies on the document nearby. The background is blurred, showing some bokeh lights.

# Correlations

- Present a stacking effect, influencing price.
- Characteristics that affect price are simultaneously affected by each other. (Multicollinearity).

Housing Sales  
Price

```
graph LR; A[Housing Sales Price] --- B[Square Feet]; B --- C[Square Feet Neighbors]; B --- D[Grade]; C --- D;
```

The diagram illustrates a hierarchical structure of factors influencing housing sales price. It begins with a large blue rectangle on the left labeled 'Housing Sales Price'. A horizontal line connects this rectangle to a light blue rectangle labeled 'Square Feet'. From the bottom of the 'Square Feet' rectangle, a vertical line descends to a dark blue rectangle labeled 'Square Feet Neighbors'. From the right side of the 'Square Feet' rectangle, a diagonal line extends to a dark blue rectangle labeled 'Grade'. Finally, a diagonal line connects the bottom of the 'Square Feet Neighbors' rectangle to the bottom of the 'Grade' rectangle.

Square Feet

Grade

Square Feet  
Neighbors



# Summing it up...

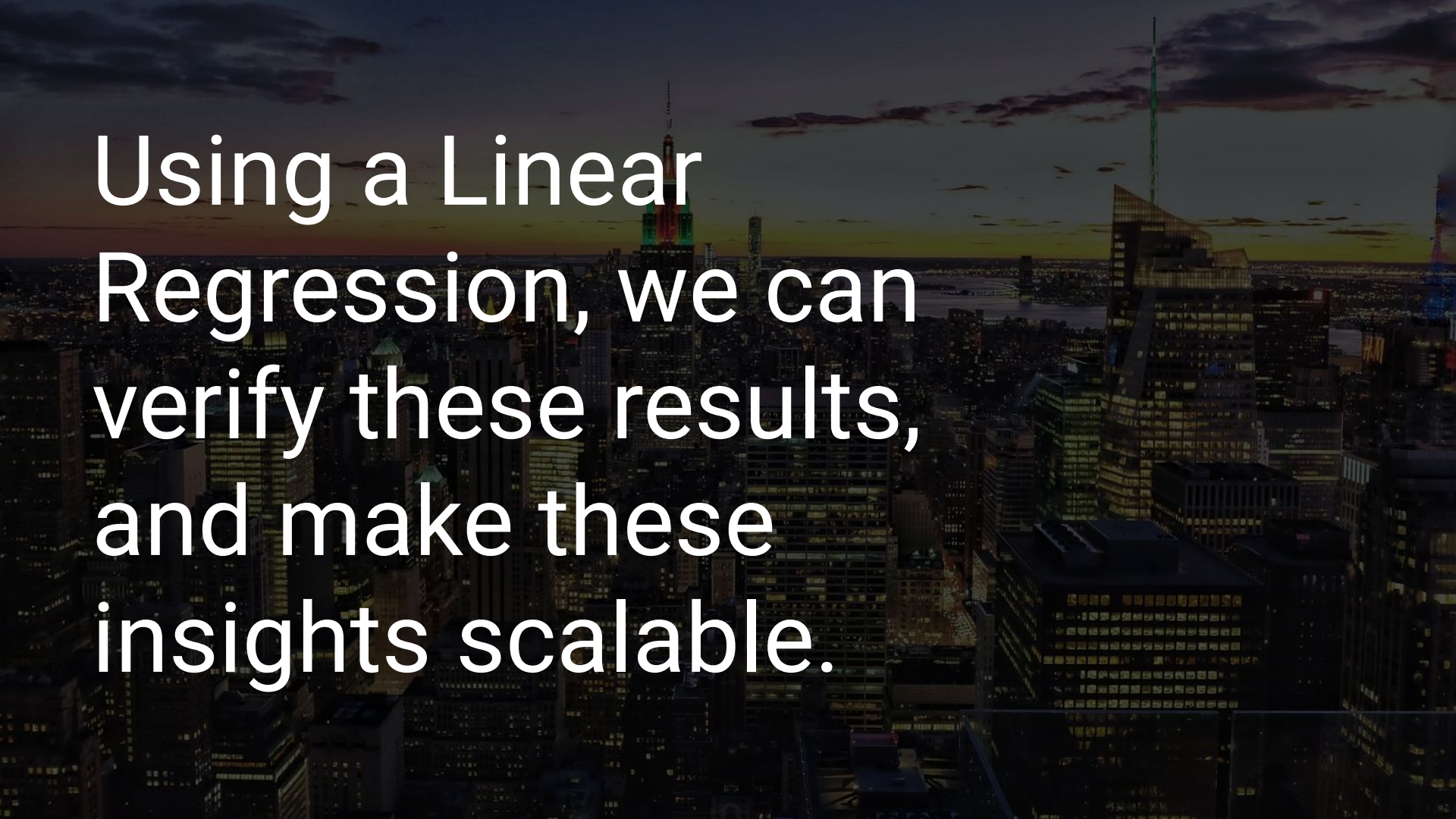
- Larger homes allow for more bedrooms, bathrooms, floors...
- Largest homes found in clusters.
- Largest homes have the highest grades.
- Homes with the highest grades have the highest selling price
- Therefore...



A close-up photograph of a person's hand, wearing a dark long-sleeved shirt, using a pencil to draw on a light-colored surface, likely a blueprint or architectural drawing. The background is blurred, showing some indistinct shapes and colors.

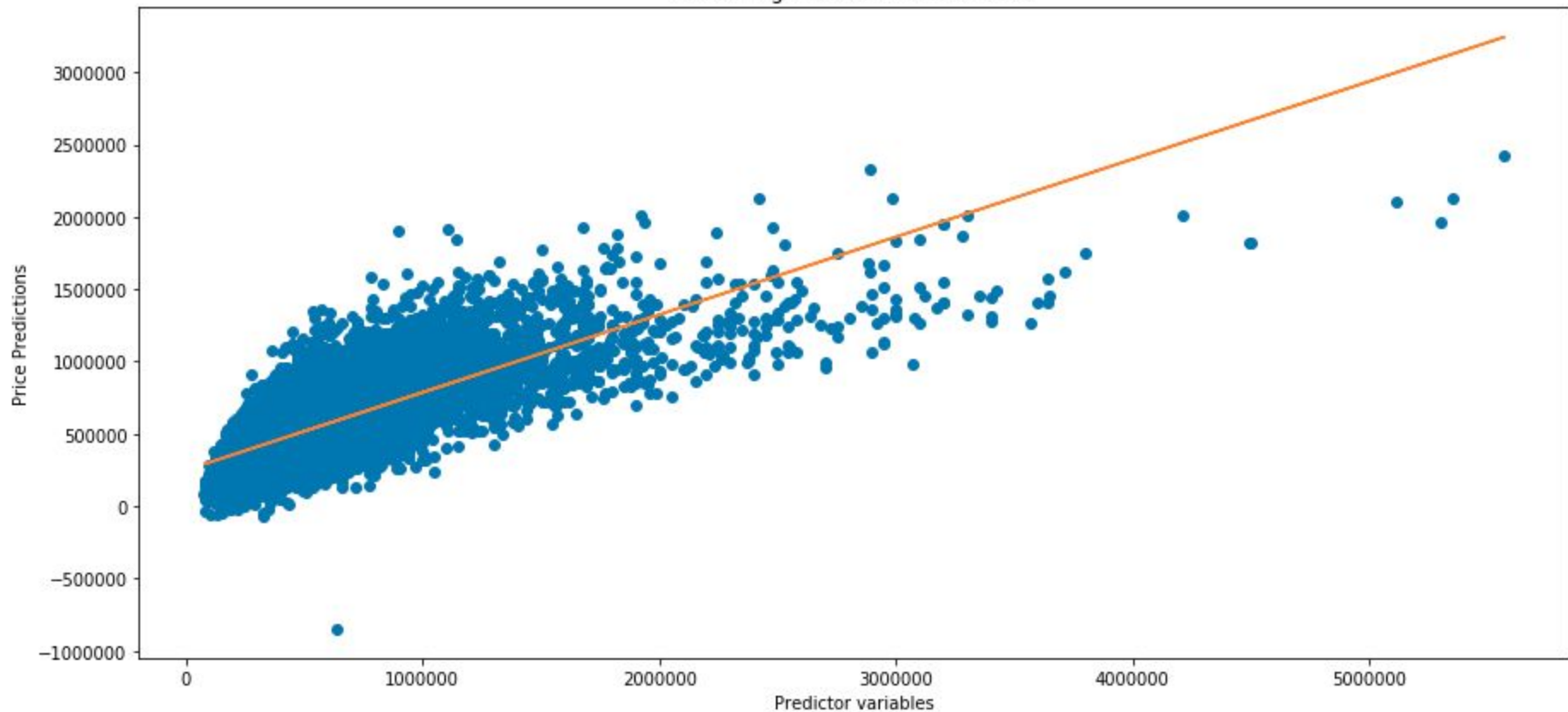
# Strategy

- Target the largest homes with the highest grades.
- Gain equity, keep equity.
- Discover the equity of your current home.

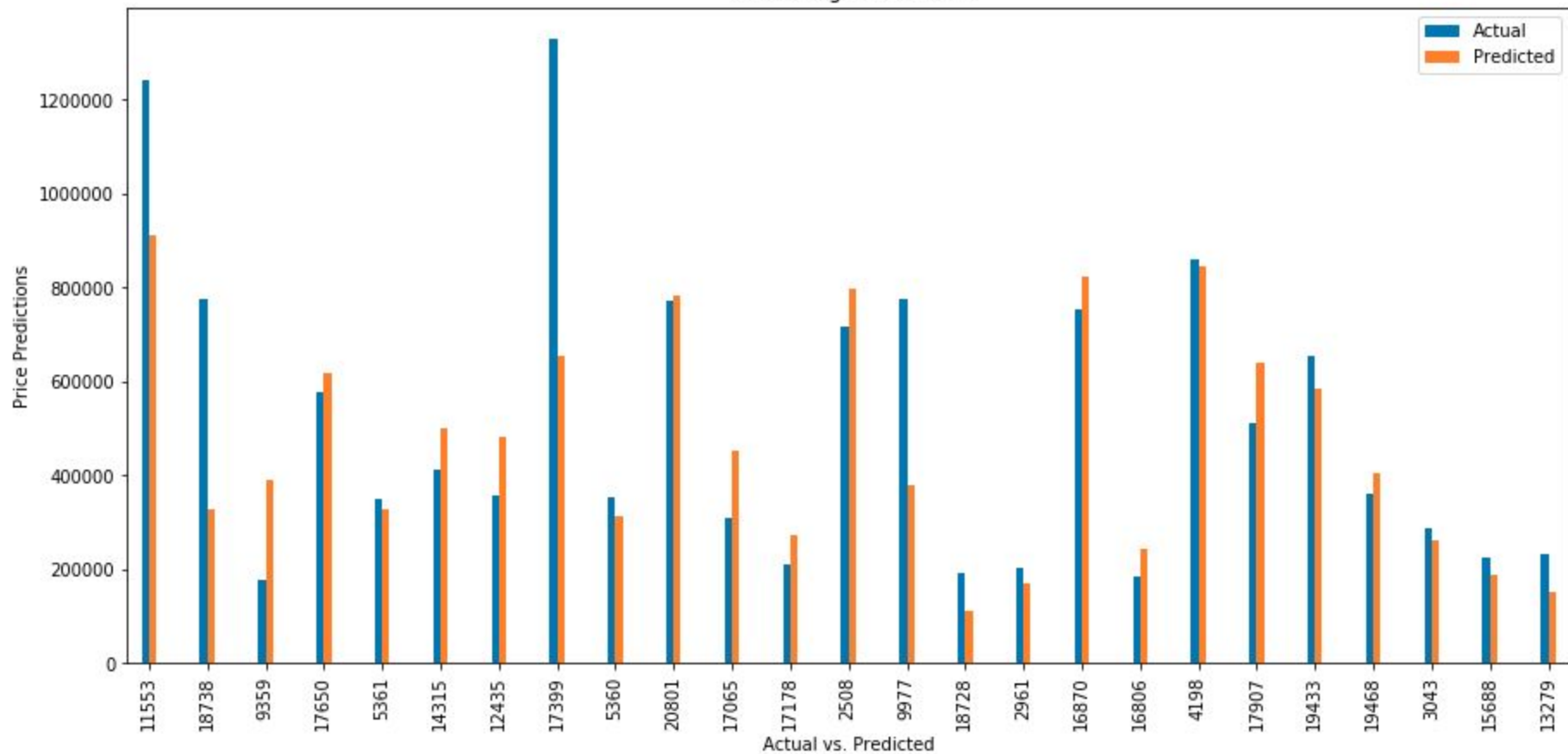
An aerial photograph of a city skyline at dusk or dawn. The sky is a mix of dark blue, purple, and orange. The city is densely packed with skyscrapers, many of which have their lights on. The text "Using a Linear Regression, we can verify these results, and make these insights scalable." is overlaid in white, sans-serif font on the left side of the image.

Using a Linear  
Regression, we can  
verify these results,  
and make these  
insights scalable.

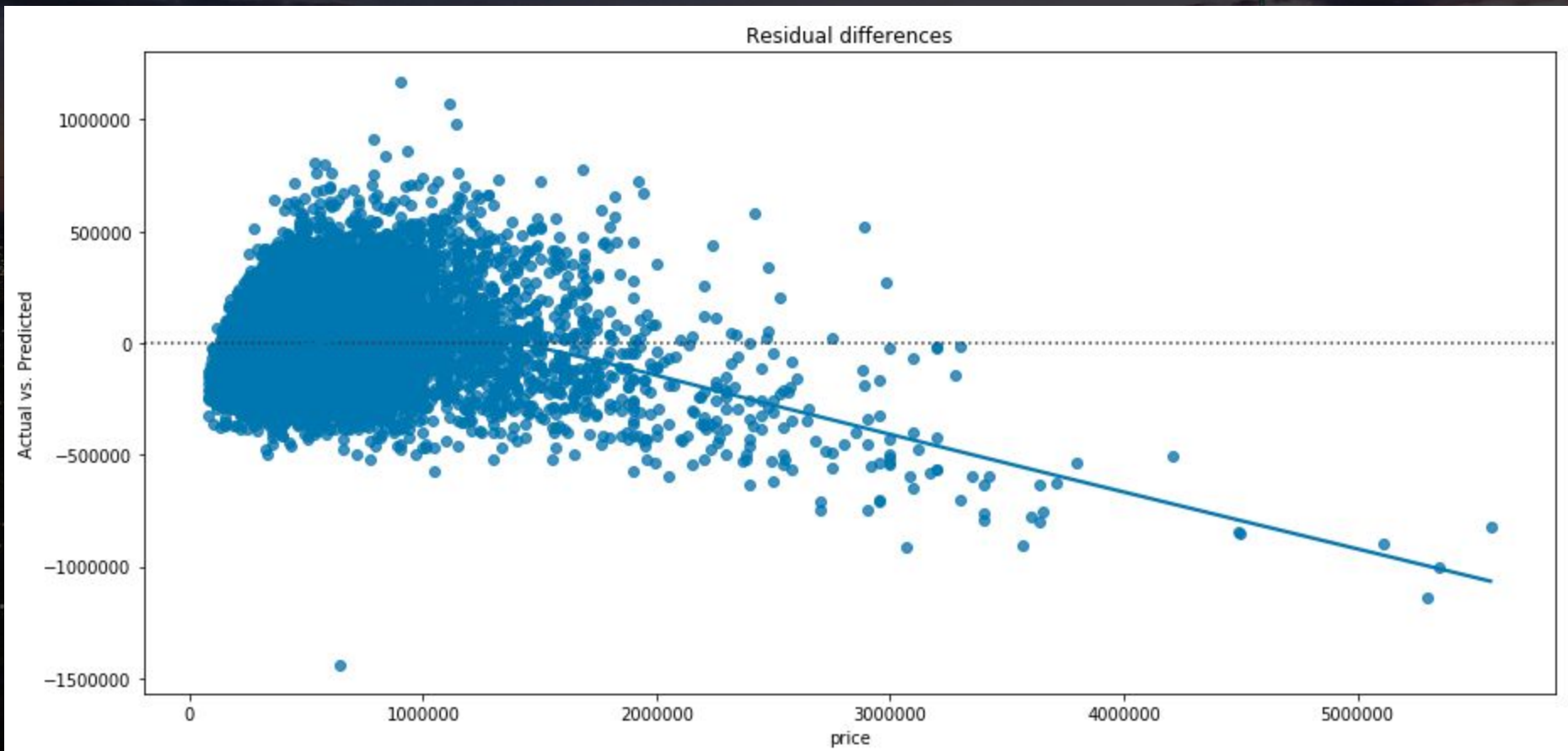
Linear Regression Price Predictions



# Visualizing Differences







# Model Conclusion

*Model underfits by \$244,122*

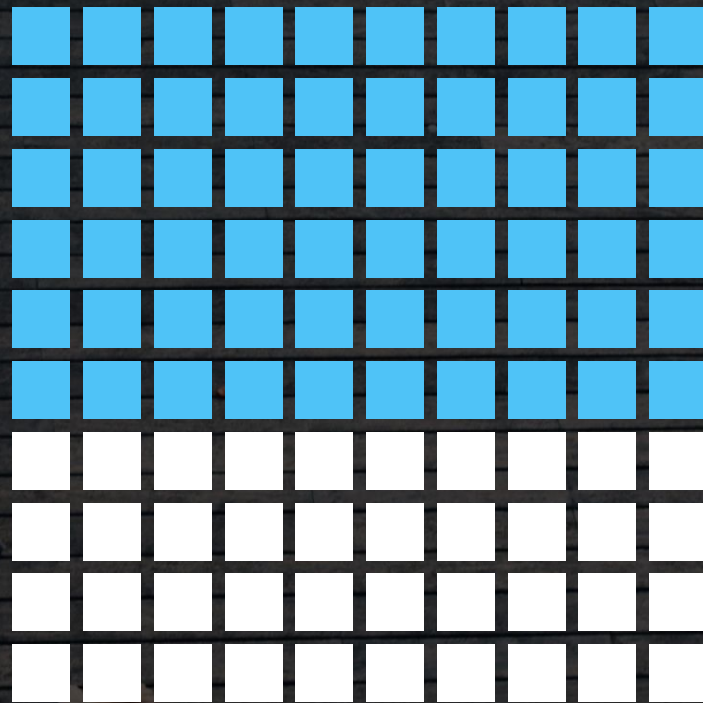
*Assumptions:*

- *Normally distributed*
- *Linearly related*
- *NOT homoscedastic*

*Further modeling needed.*

# Recommendation:

- Polynomial Features
- Grid Search
- Decision Tree Regressor
- Random Forest Regressor



# King County Conclusion

- Clear linear relation between housing characteristics and selling price.
- Models can guide potential buyers, or better inform homeowners of their equity.
- *Further modeling is needed to ensure the greatest financial strategy.*