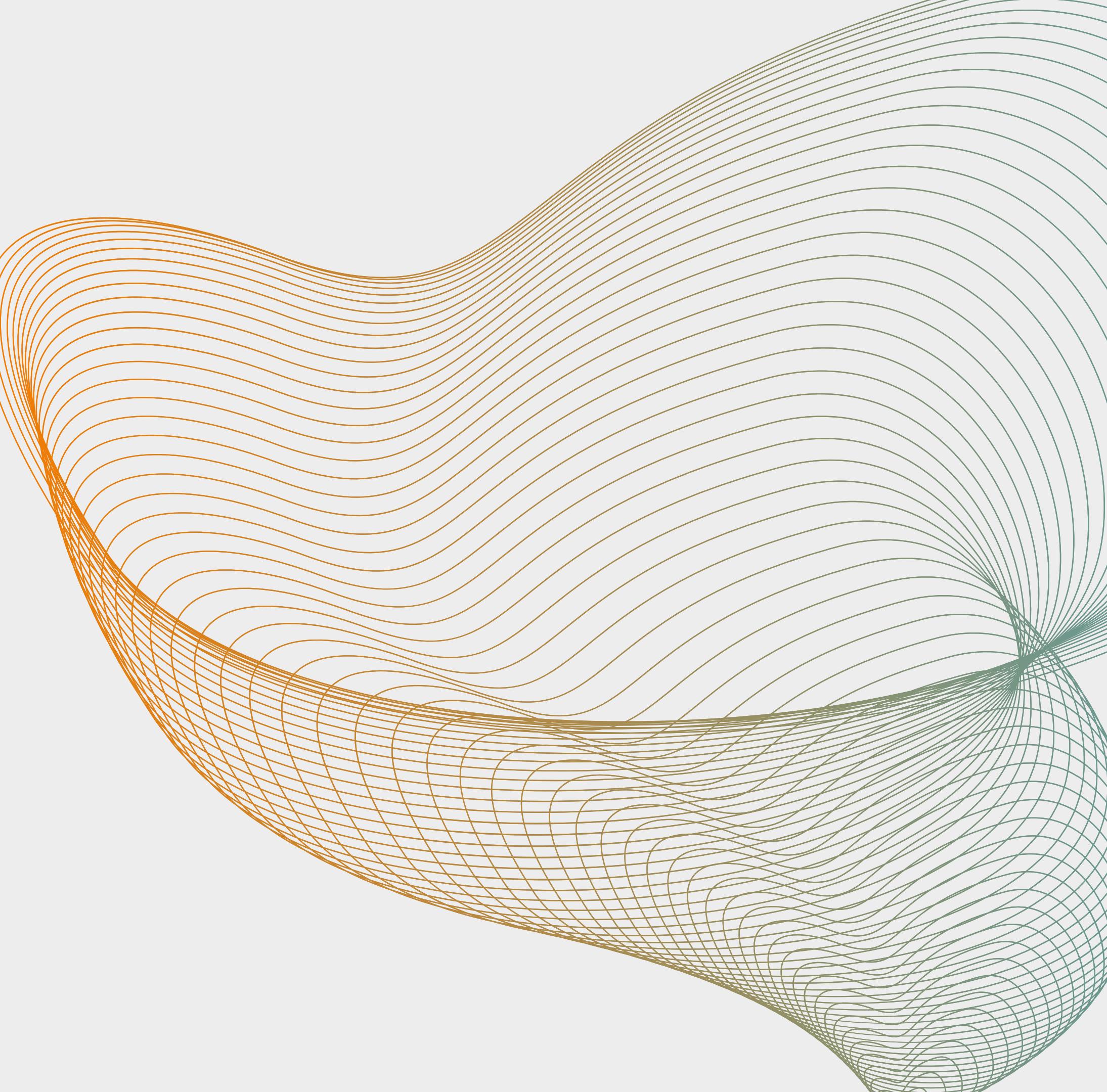




Austin House Pricing Analysis

Created by
Paola Aleman
Javier Robles
Marijose Cavazos
Cesar Cruz





Objective(s)

- Predict house pricing in Austin, Tx based on property features.
- Build a web page in which different visualizations of the data are shown to observe general trends before going into machine learning predictions.

Webpage Mock-up



Panel

User will be able to select specific property features (filters)

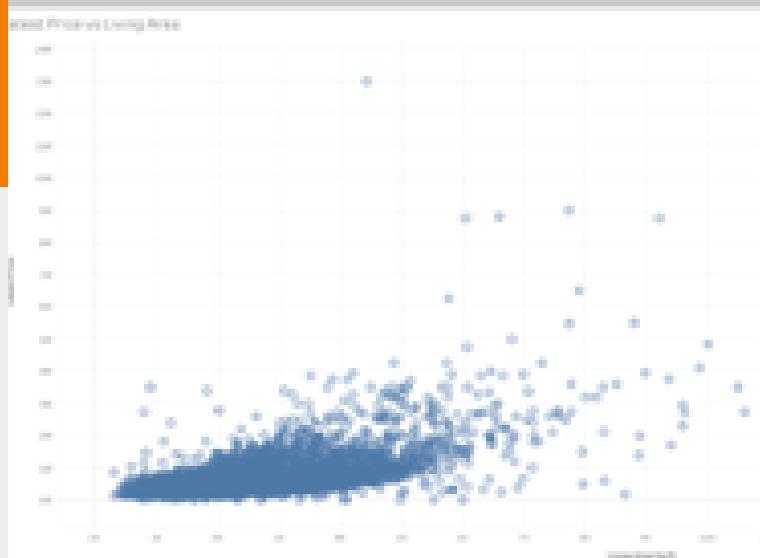
Visualizations

User will be able to choose different visualizations compared to latest price.

Predict house pricing in Austin, Tx

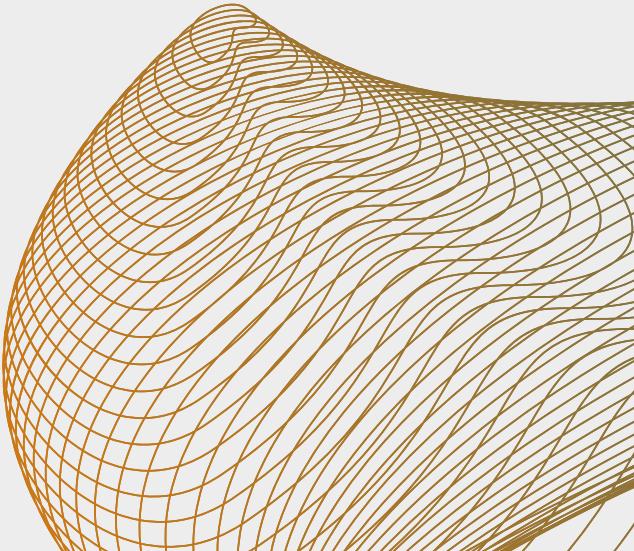
Objective: This webpage will help the user predict house pricing based on property features such as amenities, bathrooms, bedrooms, among others.

of Bedrooms
of bathrooms
of accessibility features
of parking spaces
...



Map

Map with markers showing property prices and other features as well as estimated price by our AI model.





Code development

- 1. Data set clean-up
- 2. Models: Neural Network & Linear Regression
- 3. API
- 4. HTML/JavaScript
- 5. Dashboard design





Models

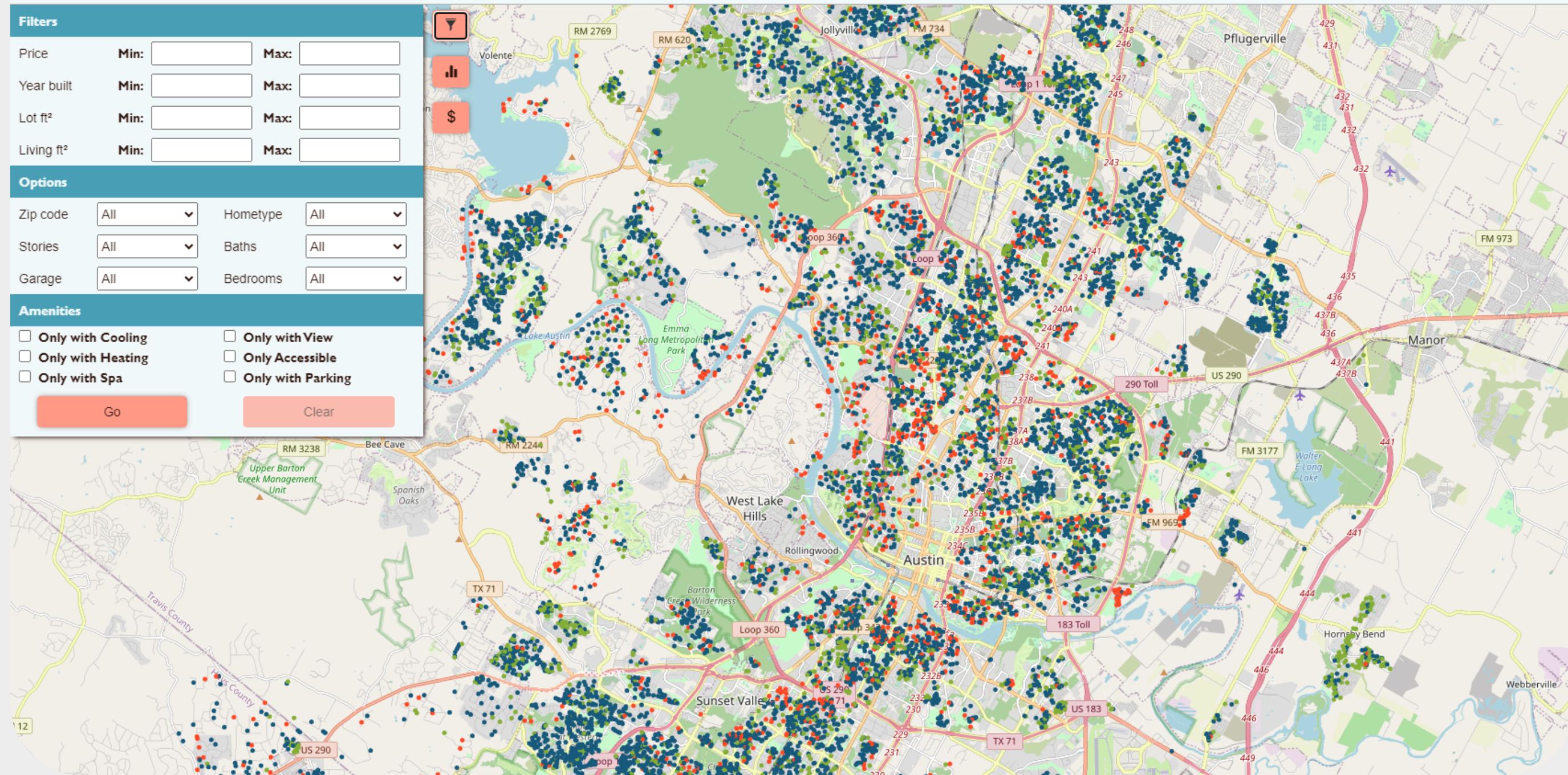
Linear Regression and Neural Network codes were both built. Our data set is not linear, so using linear regression wouldn't be the best model. However the neural networks demonstrated a better fit to our data set.

LR MAE= 173,933.27 dlls

NN MAE= 97,185.85 dlls



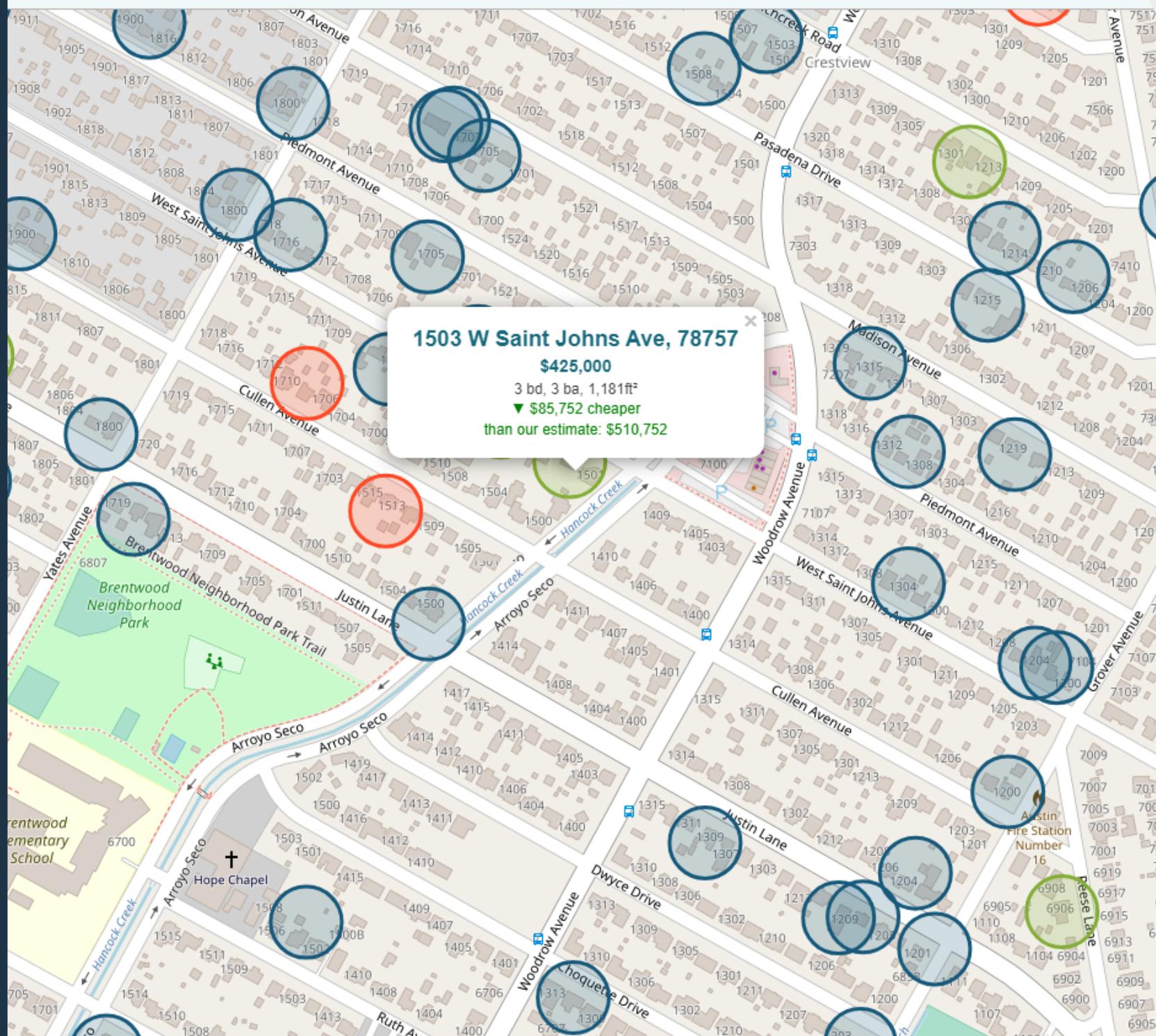
Austin TX House Pricing Analysis



Landing Page



Austin TX House Pricing Analysis



Map Close-up

The map shows markers in 3 different categories.

Good (predicted \$ > listed \$)

Neutral (predicted \$ ≈ listed \$)

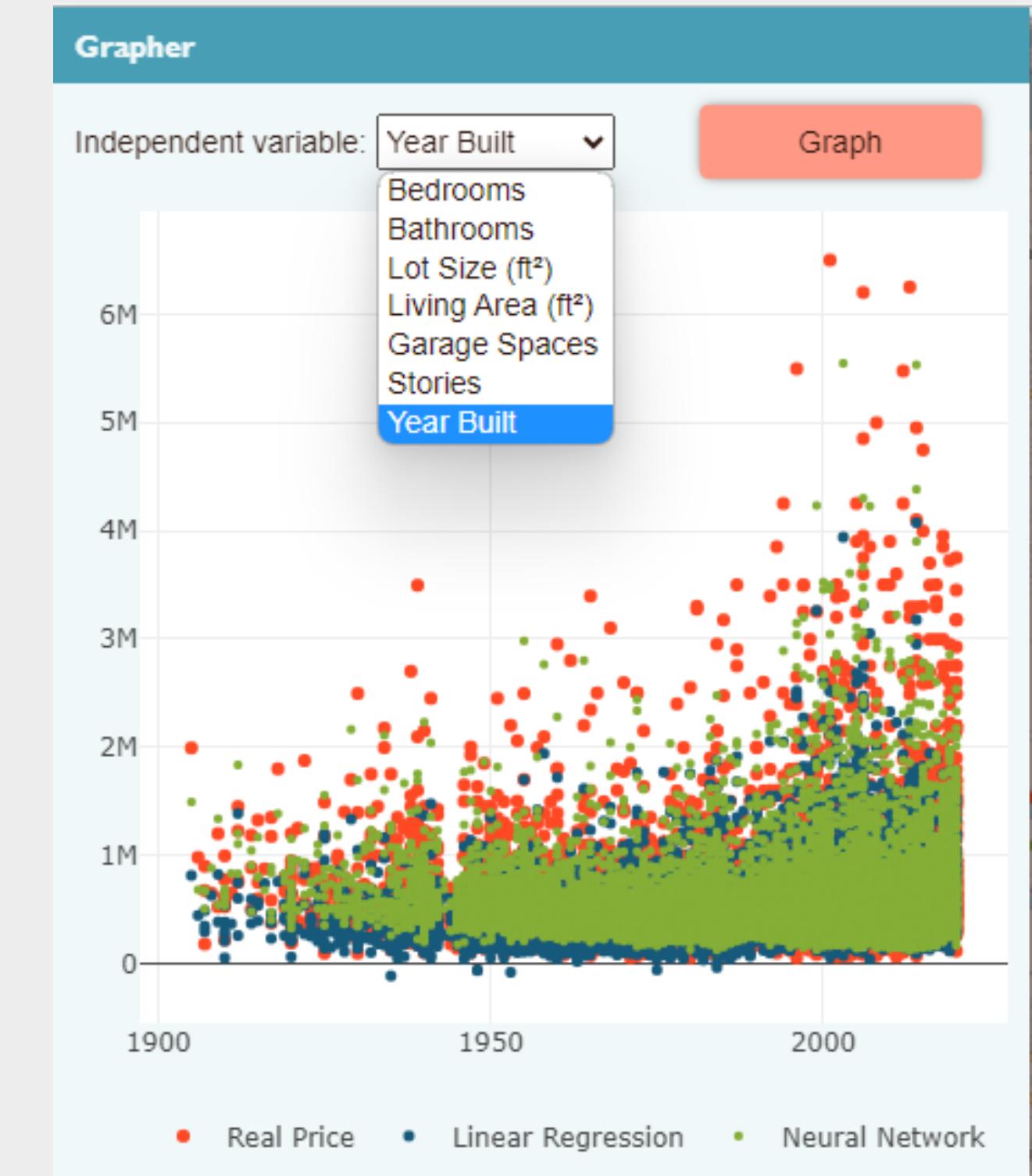
Bad (predicted \$ < listed \$)





visualizations

We graphed the linear regression model, the neural networks model and the listed price. The graph is interactive; the user will choose between different property features to be graphed against price.





Price Predictions

The user can predict the price of a house based on property features for both linear regression and neural network models.

Predict Price

Linear Neural Network

Specifications

Latitude	30.432986	Longitude	-97.661591
Zipcode	78660	Tax Rate	1.98
Year Built	2012	# of Price Changes	5
Avg School Rating	2.66667	# of Schools	3
Lot Size (ft ²)	6011	Living Area (ft ²)	2601

Number of...

Patio/Porch	1	Security	3
Bedrooms	4	Bathrooms	3
Stories	2	Garage Spaces	2

Features

<input checked="" type="checkbox"/> Has Cooling	<input type="checkbox"/> Has Spa
<input checked="" type="checkbox"/> Has Heating	<input type="checkbox"/> Is Accessible
<input type="checkbox"/> Has View	<input type="checkbox"/> Has Waterfront

Go **Clear**

Predicted Price

\$379,883



DEMO



Short demonstration of how our webpage works
and looks like.

Conclusions

- The model that best fits our data set was the neural networks model based on the MAE (Mean Average Error), which had a lower value.
- Categorized the predicted price values into good, bad and neutral by comparing it to the listed price.
- The predicted price only accounts for the features provided in the table. It is not meant to be taken as a final decision, but as a guidance when buying or selling a house in Austin, TX.





Thank You



Linked In:

*/javier-robles-samar
marijose-cavazos-b2a35310/
/cesar-augusto-cruz-reyes/
/paola-aleman19*