



Motorcycle Price Prediction



Presentation Outline

- Purpose of Analysis
- Data and method
- Modeling
- Results
- Future steps

Purpose of Analysis

Predict motorcycle prices in an unregulated market such as Craigslist or Facebook Marketplace:

- Are you getting a good deal or bad deal?
- How much should the motorcycle you're purchasing cost?



Scraping Data from Craigslist

- Listings from each city
- Individual features per listing (Price, make, model, odometer)

CL New York ± 7.6 mi > for sale > motorcycles

Motorcycles/Scooters

all owner dealer

☐ search titles only
☐ has image
☐ posted today
☐ bundle duplicates

MILES FROM LOCATION
× New York ± 7.6 mi

PRICE
min max

MAKE AND MODEL
make / model

ENGINE DISPLACEMENT (CC)
min max

MODEL YEAR
min max

ODOMETER
min max

☐ street legal


▶ type
▶ condition
▶ fuel
▶ paint color
▶ title status
▶ transmission

☐ cryptocurrency ok
☐ delivery available

search Motorcycles/Scooters

Livewire \$19,895 (Long Island, NY queens) 3mi


\$9,750



★ Oct 19 **Moto Guzzi Ambassador 1971**
\$9,750 (Brooklyn brooklyn) 4.6mi

East Side) 1mi


\$19,500



★ Oct 19 **Rare & original 1965 BMW R69S**
\$19,500 (Brooklyn brooklyn) 4.6mi


queens) 5.1mi

\$17,888




★ Oct 19 **2017 Harley-Davidson Dyna Low Rider S FXDLS** \$17,888 (Long Island, NY queens) 3mi

\$300




★ Oct 18 **2 vintage Vespa scooters Stolen**
\$300 (Upper West Side) 0.6mi

\$3,300



★ Oct 18 **1980 Honda CB 750 K** \$3,300 (Brooklyn brooklyn) 6.8mi

\$2,300



★ Oct 18 **XT 350 Dual Sport** \$2,300 (njy > Bergen County) 6.2mi

Unique Features Web Scrapping

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Posted 2 days ago

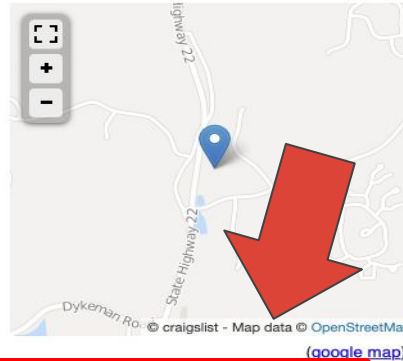
[print](#)

2003 Harley-Davidson Electra Glide Firefighter edition We Finance - \$10,999 (Wilkins Motorsports)

image 1 of 17



HARD TO FIND! Immaculate condition a true fire fighter edition Harley Davidson. 100th anniversary Fuel injected, ABS brakes, cruise control all of the options. 2003 Harley-Davidson FLHTCUI Ultra Classic Electra Glide, TRULY TOO MANY EXTRAS TO LIST!!!!...FIRE FIGHTER SPECIAL EDITION!!!!...PRISTINE CONDITION!!!! - 100th Anniversary FLHTCUI Ultra Classic Electra Glide The Ultra Classic Electra Glide. From front fender to rear luggage, theres never been a way to



2003 Harley-Davidson Electra Glide

fuel: gas

odometer: 18000

paint color: red

street legal

title status: clean

transmission: manual

type: touring

Year: 2003

Make: Harley-Davidson

Fuel: Gas

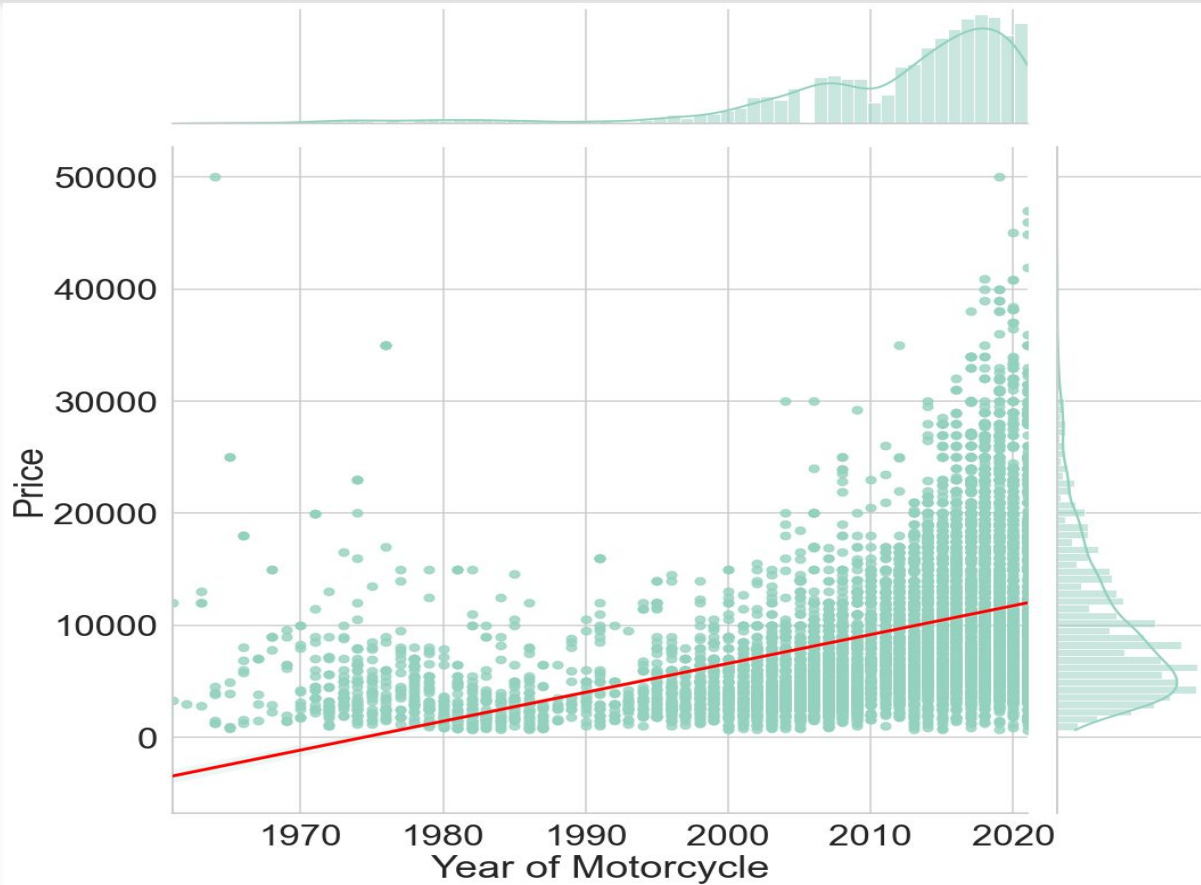
Odometer: 18,000

Transmission: Manual

Type: Touring

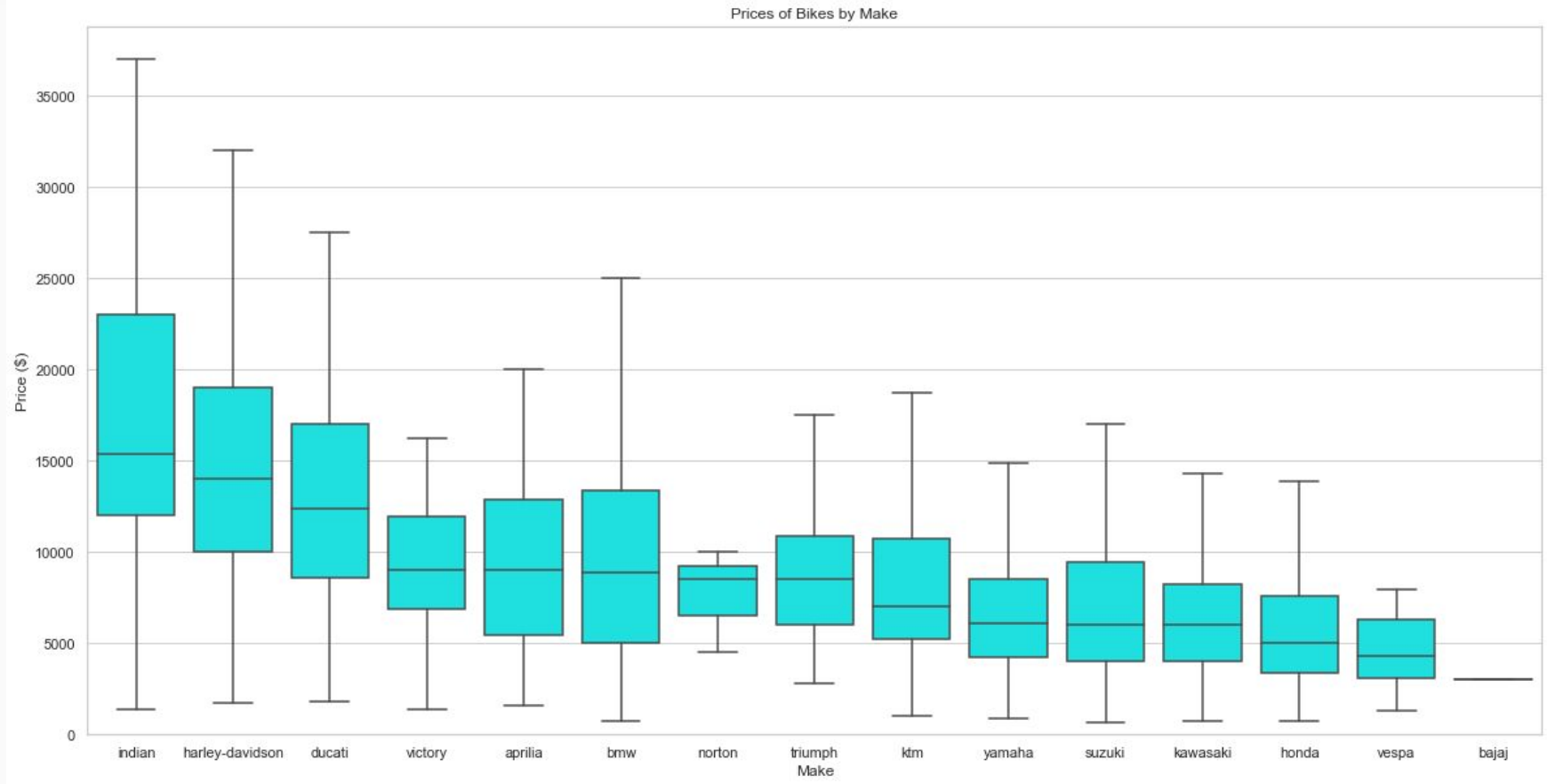
Title Status: Clean

Price vs Year of Motorcycle on a Jointplot



- Higher price typically equals a more recent year
- But a recent year does not automatically equal a higher price

EDA - Price of motorcycles by Make (Indian typically being the most expensive)



Regression Models

1. Simple Linear Regression
2. Decision Tree Regressor
- 3. XGBoost Regressor**
4. KNeighbors Regressor
5. Random Forest Regressor

Best Model

XGBoost Regressor

- Over 70% variance explained
- RMSE of less than \$2,500



App Deployment

Enter the features of the motorcycle and the model will give out a range for how much the price should be

Motorcycle Price Prediction




Photo by [Unknown](#) on [Google Images](#)

Motorcycle Make Harley Davidson

Year of Bike 2003

Type of Bike Index Sport Bike

Condition of Bike Excellent

Transmission Type Manual

Title Status Clean

Paint Color Black

Odometer/Mileage

Fuel Type gas

Predict!

Place holder for content I want to place

Info about scraped data from Craigslist and how my model does the predictions

More text holder

Future Steps

- I definitely would like to add the model for each make
-
- Include the VIN number and maybe have it automatically run a carfax report



Thank you

Avi Rubin

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