



Final Projects

Lehman College— City University of New York
Spring 2016

Course Overview



- Focus on New York City (NYC Open Data Project)
- Topics:
 - ★ Working with Data: Scraping Webpages, CSV Files, Regular Expressions, Natural Language Processing
 - ★ Statistical Tools: Regression, Bayes Theorem, A/B Testing, Distributions
 - ★ Machine Learning: Training, Classifiers, Nearest Neighbors, SVMs, Neural Networks
 - ★ Visualizing Data: Principal Components Analysis (PCA), Clustering, Voronoi Diagrams, Multidimensional Scaling
- Tools: Python, Statistics, & Linear Algebra

90 Second Previews

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2. Samantha Cardi
3. Steven Caraballo
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18. Nicholas Wilk

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Videogame Console Sales (2008 – 2015)

By: Roberto Martinez

Grad Date: May 2017

Plans:

- To graduate with a degree in Computer Science (B.S.).
- To become a videogame designer.



Analysis and Conclusion

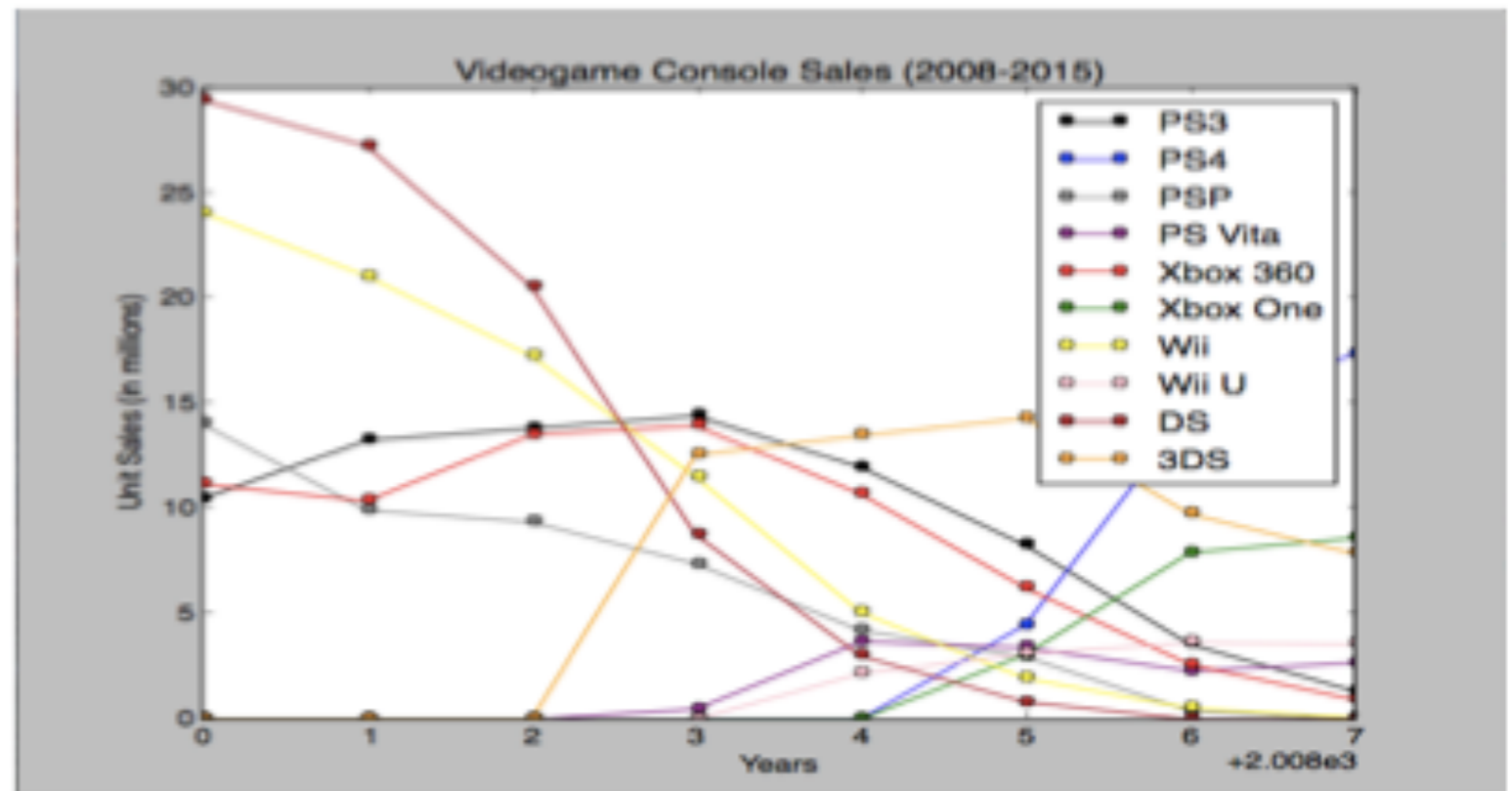
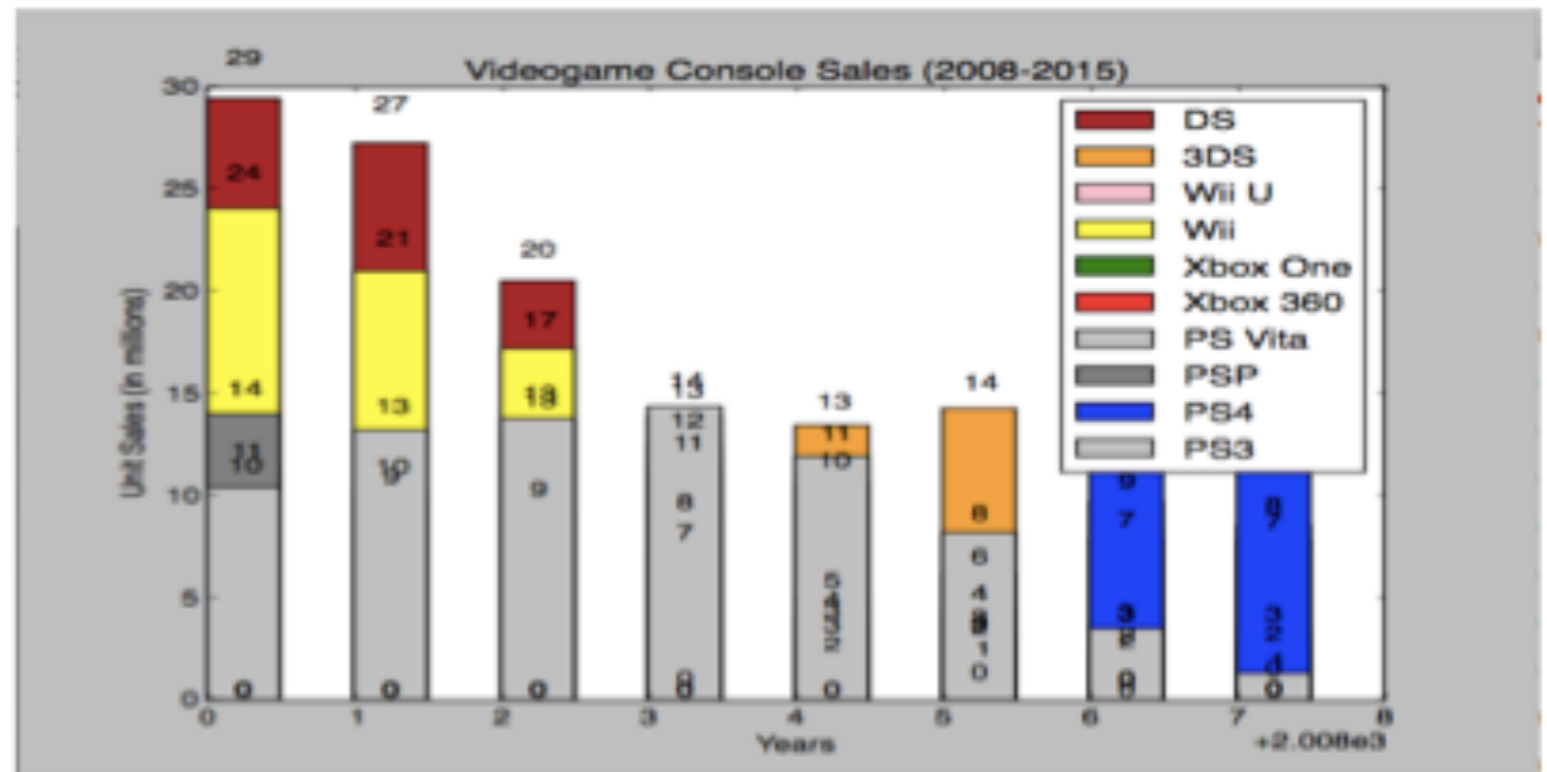
Analysis

- From 2008 to 2010, the Nintendo DS sold the most.
- From 2011 to 2013, the Nintendo 3DS sold the most.
- From 2014 to 2015, the PlayStation 4 sold the most.
- From 2008 to 2011, the PSP sold the least.
- From 2012 to 2015, the PlayStation Vita sold the least.
- Overtime, the unit sales of old consoles decrease while the unit sales of new console increase.

Conclusion

Overall, the Nintendo Wii sold the most and the PlayStation Vita sold the least.

Images



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Gentrification in NYC



SAMANTHA CARDI

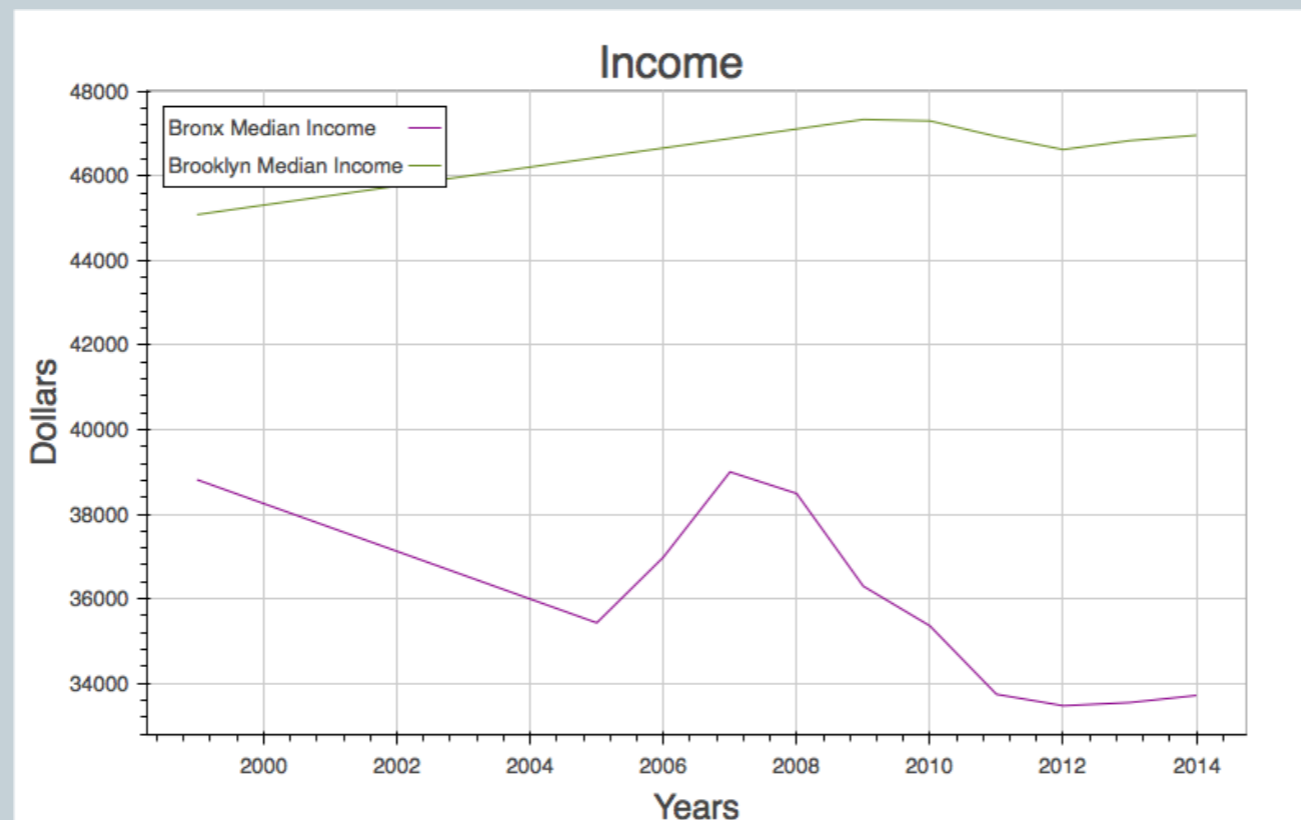


B.A Mathematics
Spring 2016
Searching for entry level position

What I Discovered:



- From 1999 to 2014, the number of people in Brooklyn who paid over \$2,000 for rent went from approximately 3,000 to 66,000 people.
- The median income in Brooklyn increases as median income in The Bronx decreases.
- Though The Bronx will inevitably be gentrified, it will not happen for another 10-20 years.



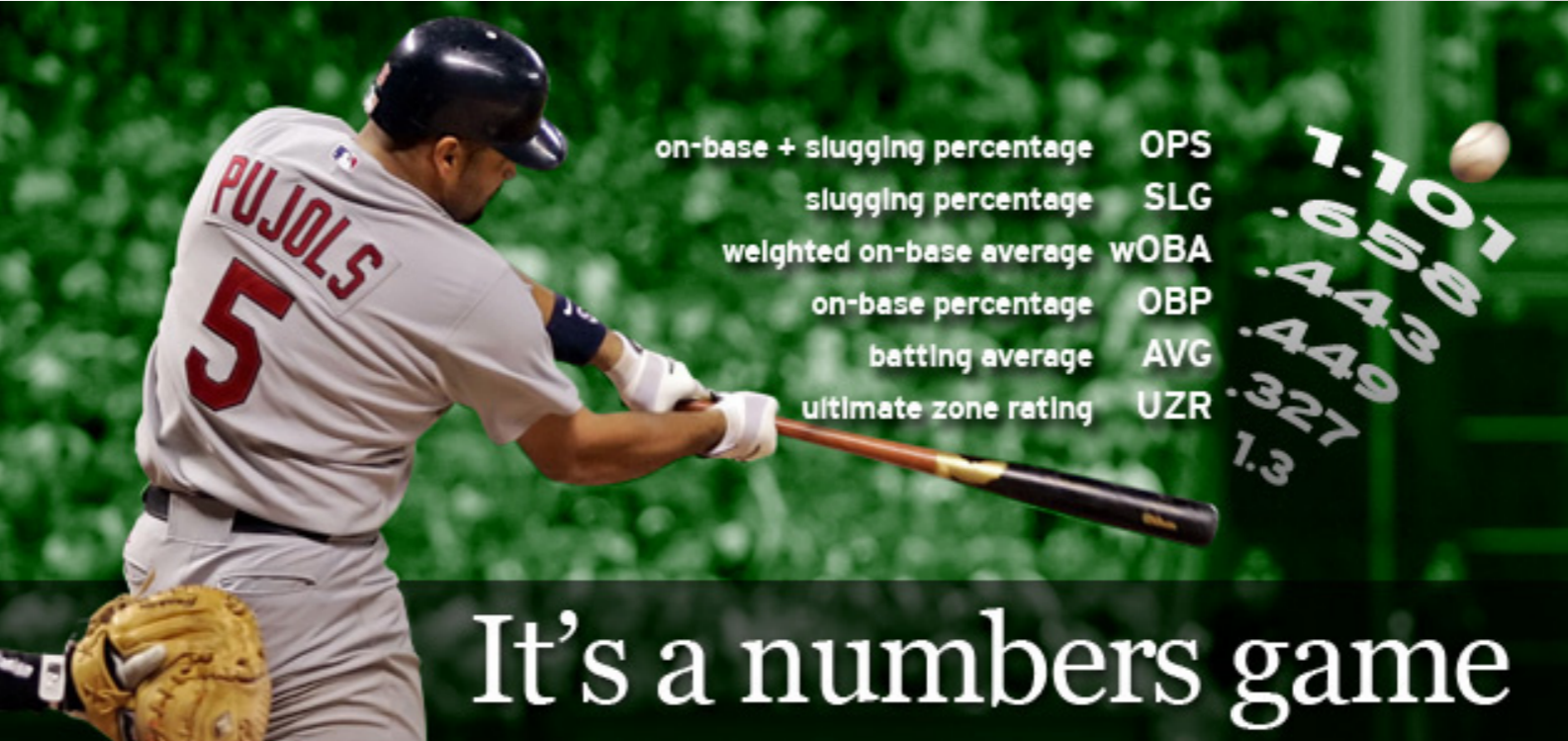
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Baseball Data Science

Steven Caraballo

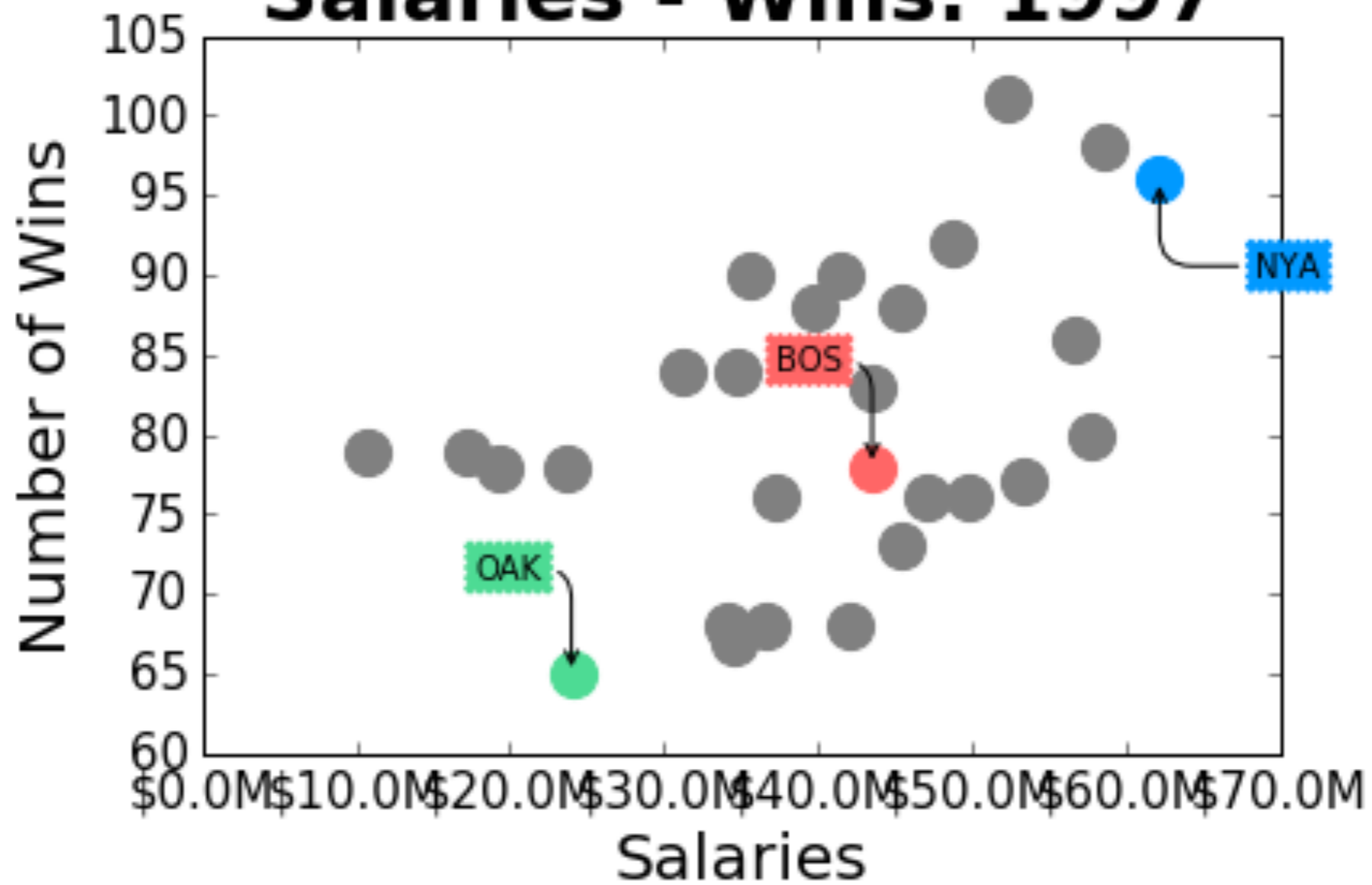
STEVEN CARABALLO



on-base + slugging percentage	OPS	1.107
slugging percentage	SLG	.658
weighted on-base average	WOPA	.443
on-base percentage	OBP	.449
batting average	AVG	.327
ultimate zone rating	UZR	1.3

It's a numbers game

Salaries - Wins: 1997

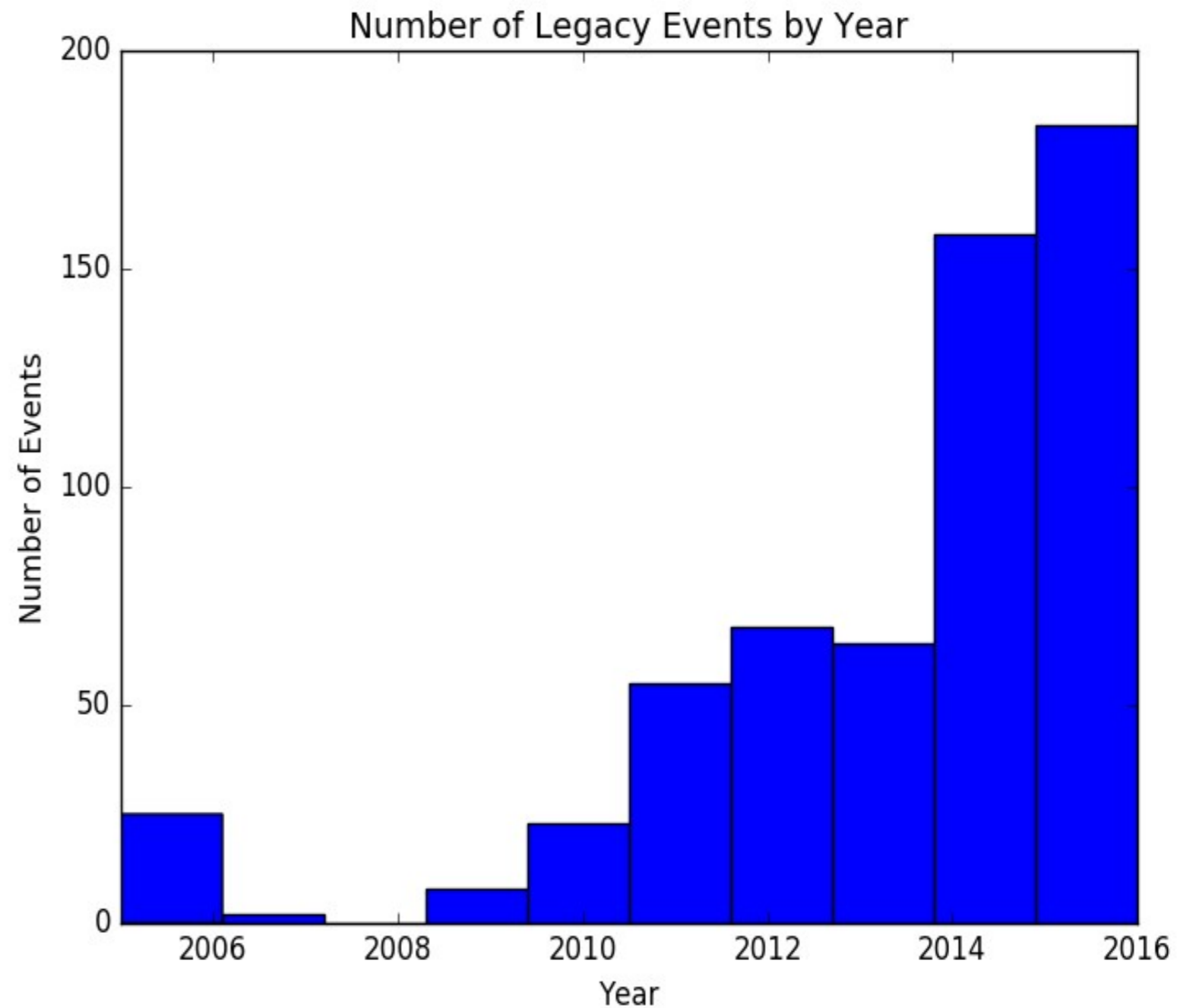


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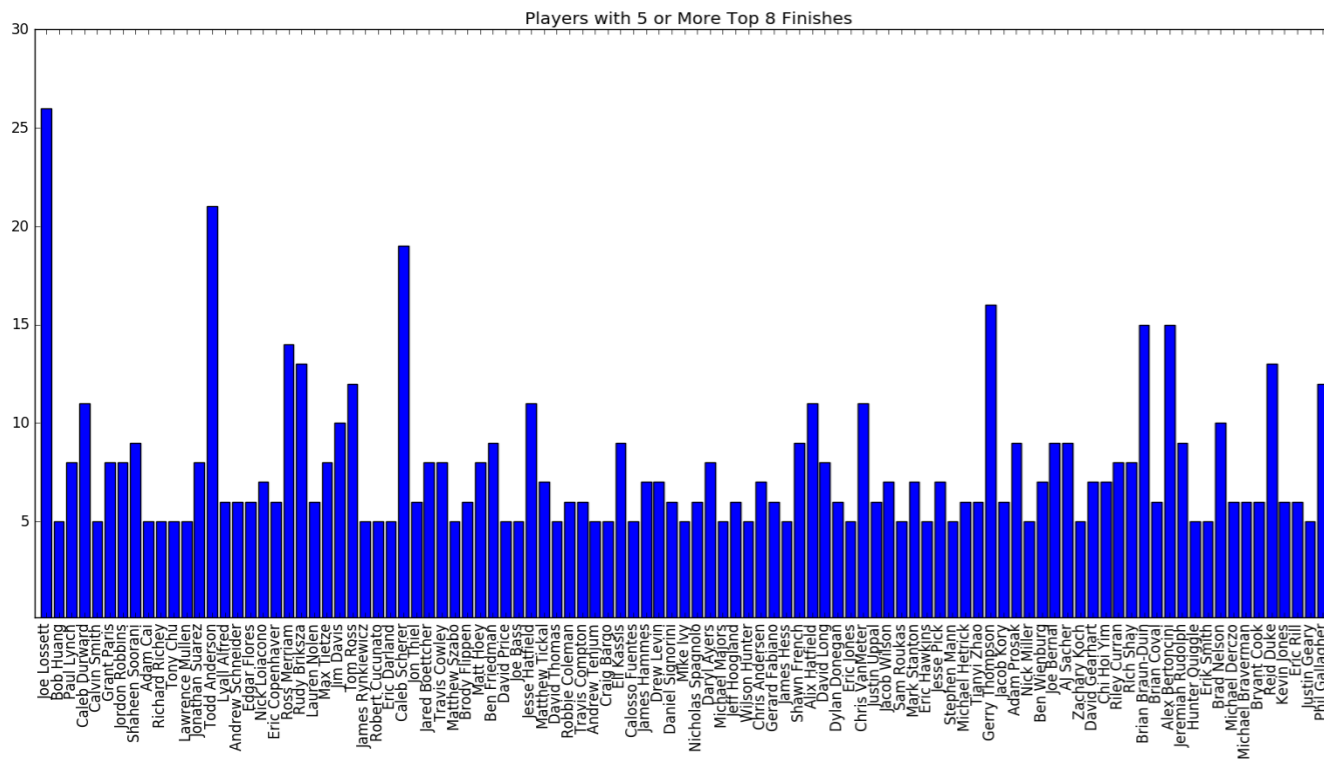
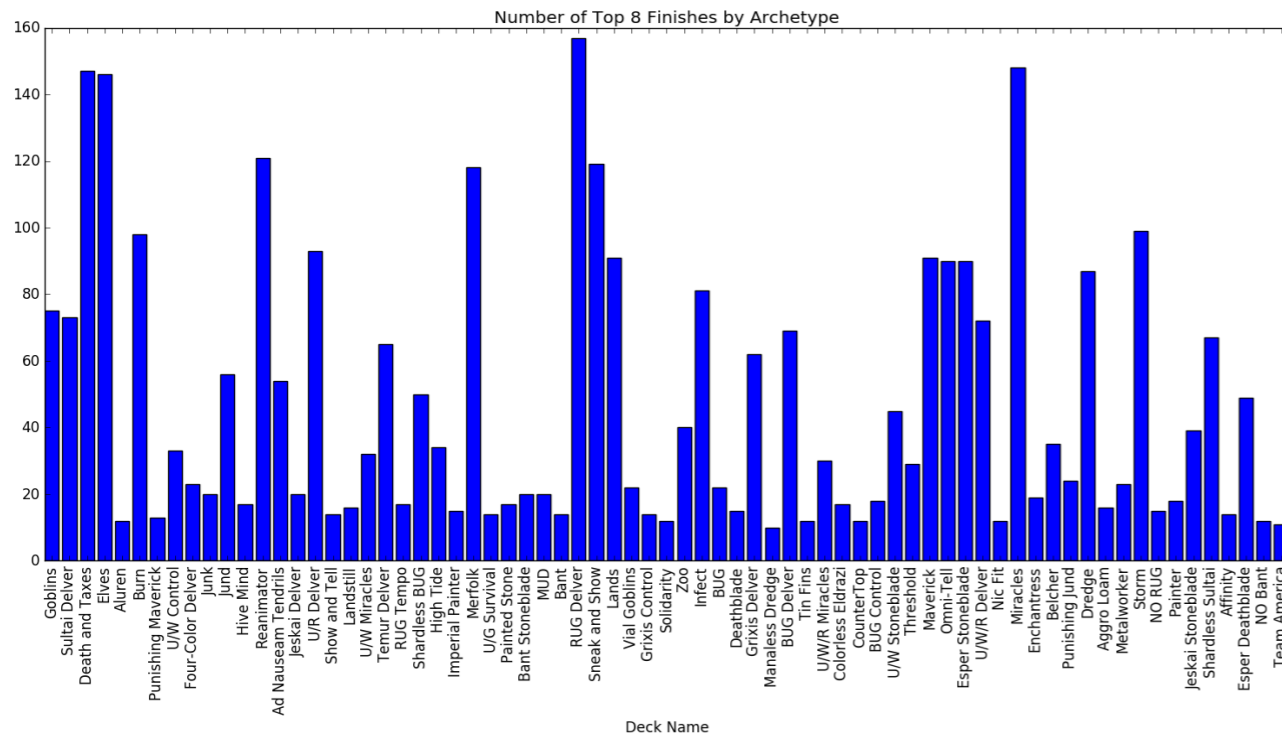
Magic the Gathering – The History of the Legacy Format

- Mark Czuy
- Graduating This May
- Currently Looking for work for after graduation



Magic the Gathering – History of the Legacy Format

Brief Findings



Mark Czuy

- Legacy is a diverse and ever changing format
- Despite there being over 200 events played to date only 17 players have been to the Top 8 more 10 or more times
- Card bannings and set introduction produce noticeable swings in the meta over time
- Even with access to all but a select few cards, Legacy at the competitive level has used only a small percentage of cards

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League of Legends Champion Trends

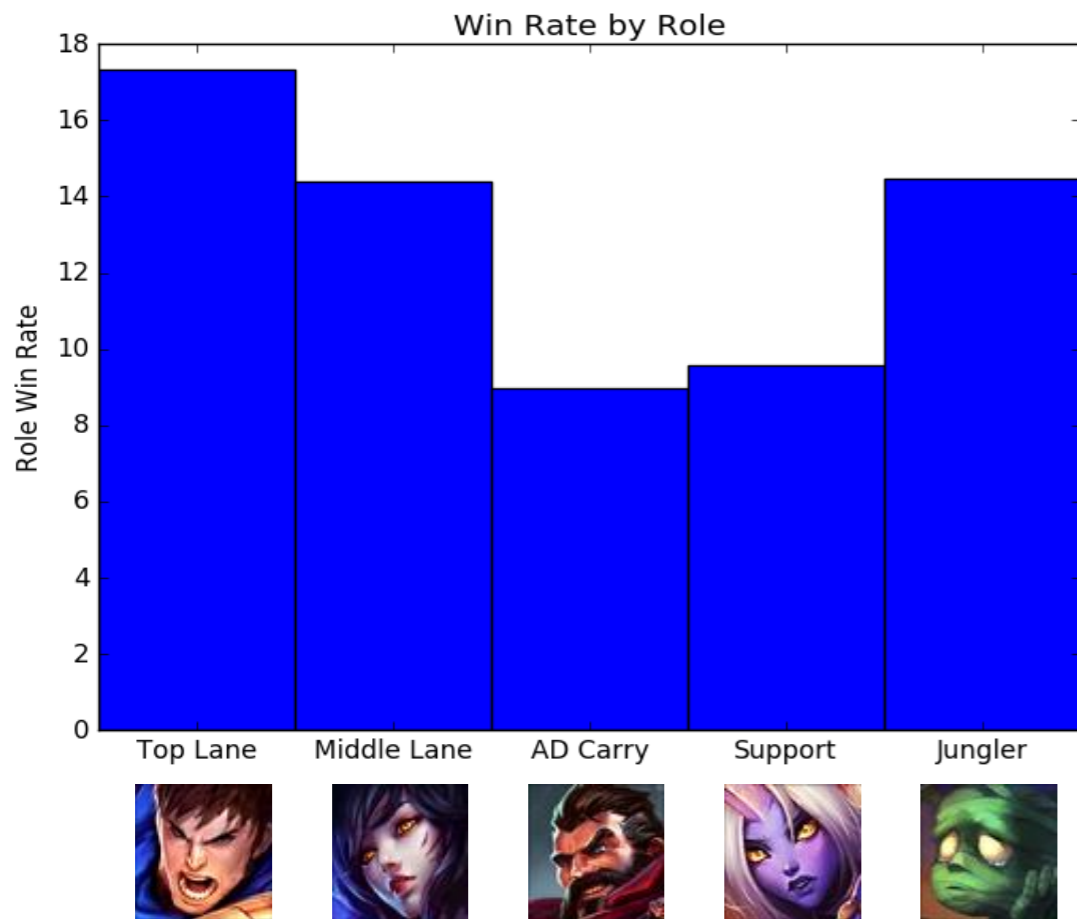
ANTHONY BELTRAN

FALL 2016

TRINCUBE ANDROID
CHALLENGE



League of Legends Champion Trends



- Top, Mid, and Jungle carry most weight on a team
- Top brings HP and potential global pressure (teleport)
- Mid brings high damage and pressure through 'roams'
- Jungle provides global and objective pressure
- Bot lane usually fragile (AD Carry & Support)

90 Second Previews

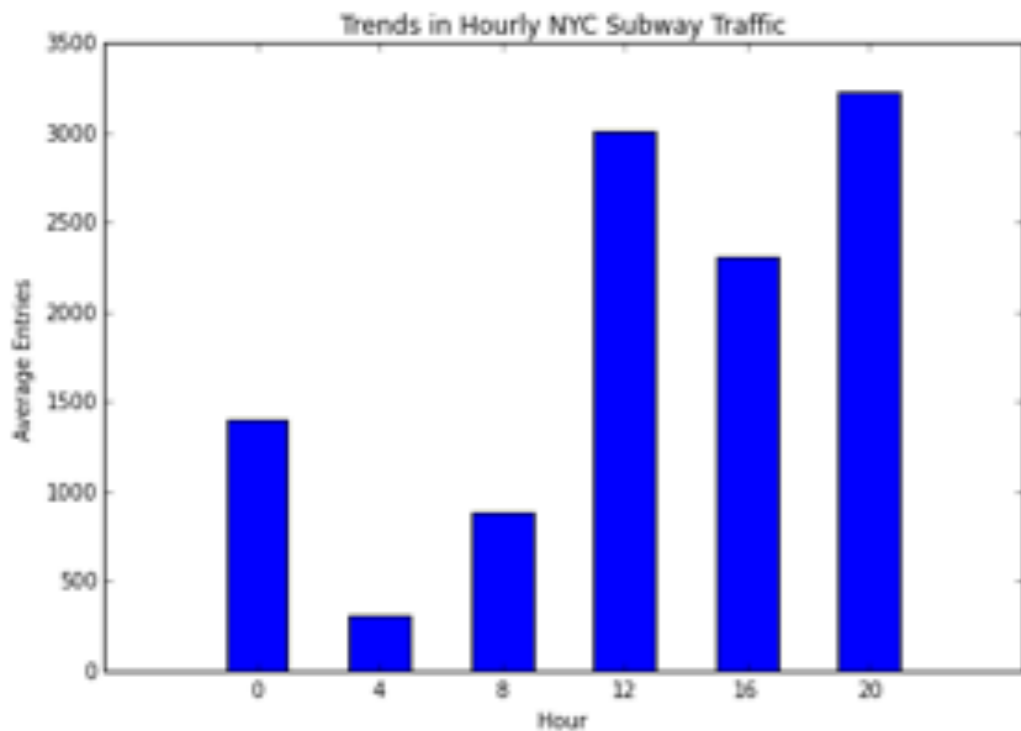
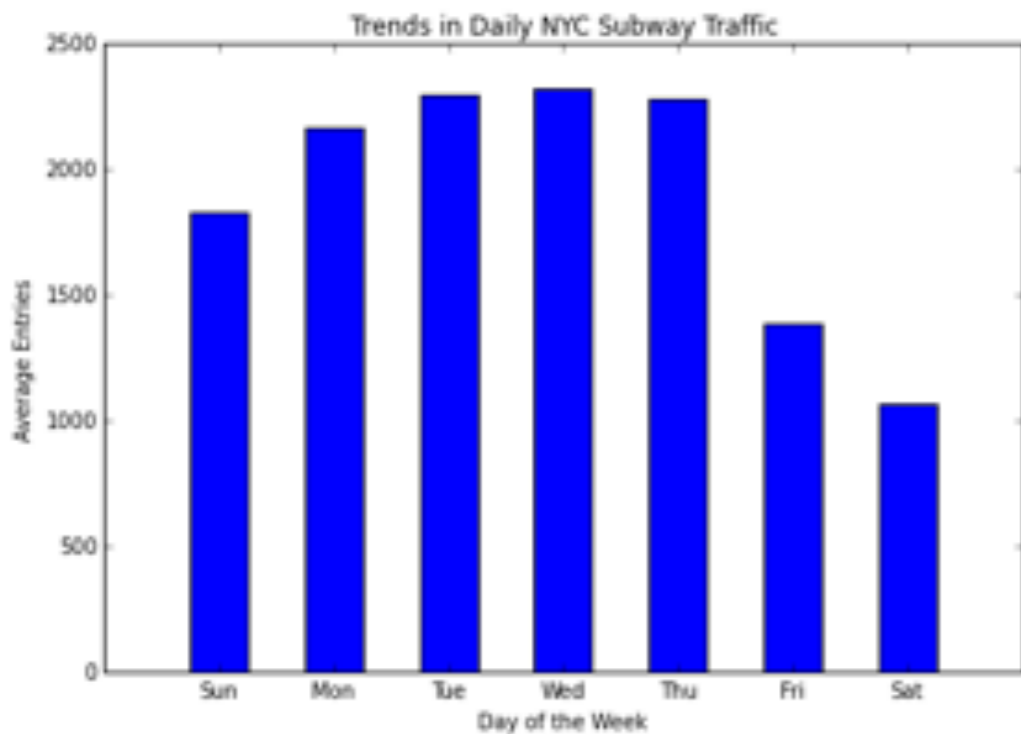
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A composite image featuring a blue and white subway train on tracks in the foreground, a white and blue double-decker bus in the middle ground, and a suspension bridge with a city skyline in the background. A blue circular logo with a white 'M' is centered behind the text.

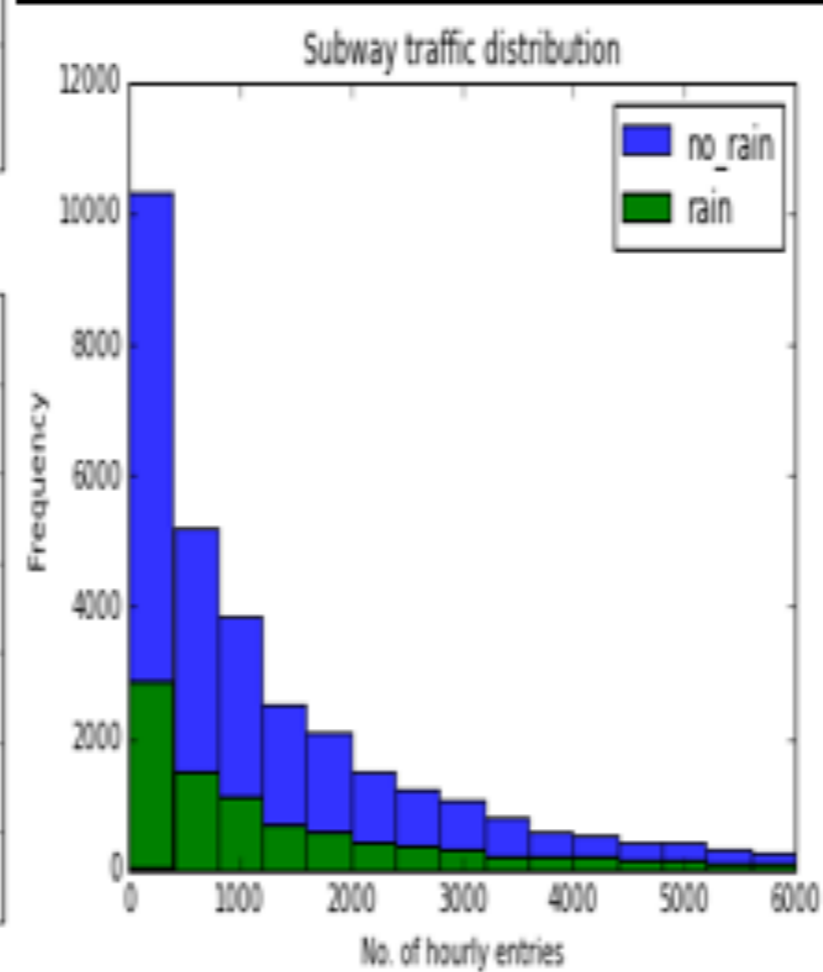
ANALYZING NYC SUBWAY

Tajh McDonald

Currently seeking internship for the upcoming summer months



One important find is that on Fridays and Saturday the number of riders of the subways are significantly lower than in mid-week or even on Sundays. It is also seen where the later in the day we are is the more riders we have and because of this I concluded that evening hours are peak hours.



The number of riders we have also differs given the weather. From this conclusion I can say there are more riders when the weather is clear compared to when there is rain. Further analysis however proved that the weather is not necessarily a major contributor to the amount of people we have riding the subway but rather their plans for the day.

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**Your choices behind
the wheel matter**

VISION ZERO
nyc.gov/visionzero

THE IMPACT OF VISION ZERO

FRANCISCO PEREZ



I DISCOVERED THAT VISION ZERO HAD NOT BEEN AS EFFECTIVE AS PEOPLE THOUGHT IT WOULD HAVE BEEN. YES IT MAY SAVE MORE LIVES HOWEVER, THERE ARE STILL TOO MANY CRASHES DUE TO DISTRACTED DRIVERS.

90 Second Previews

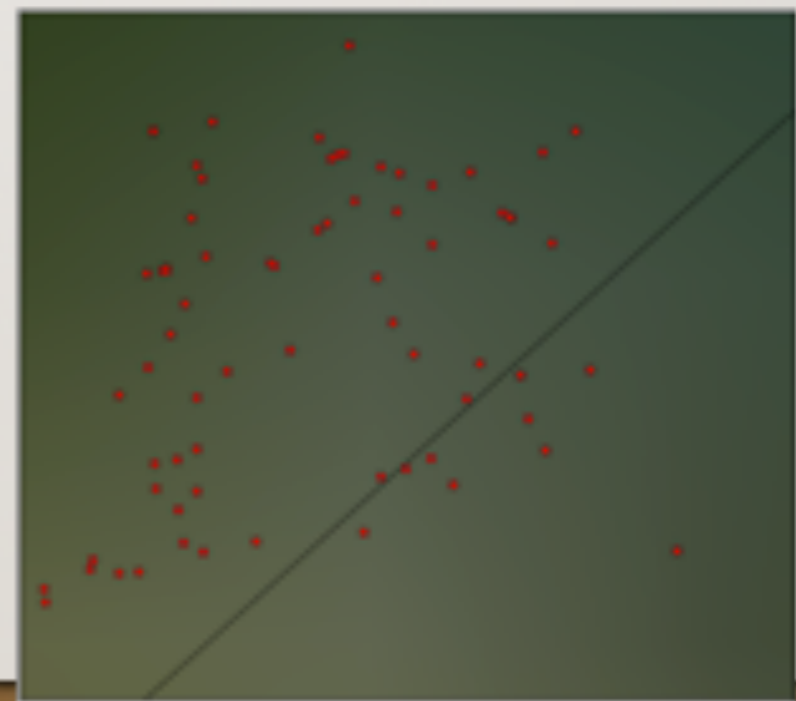
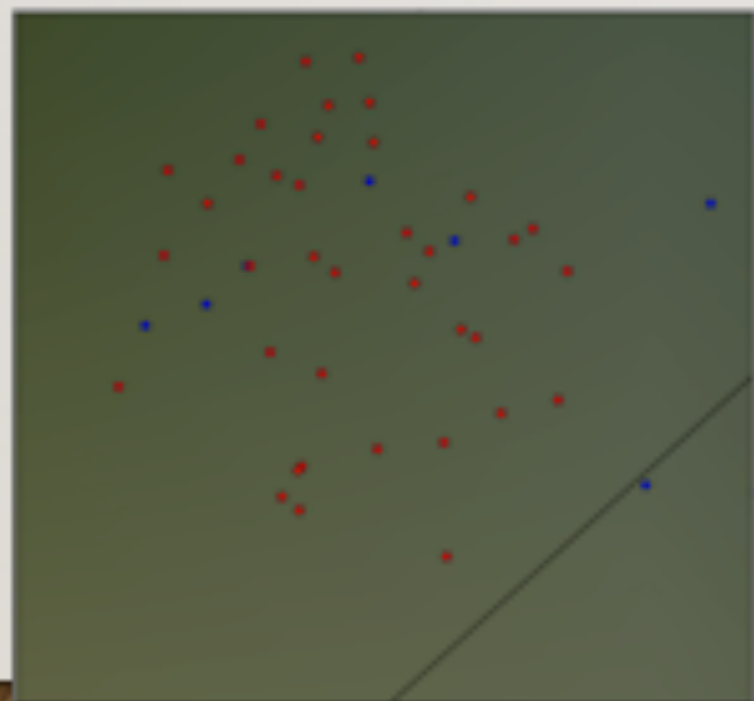
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SAFE STREET

BY: YUSEF ABDULLA

SAFE STREET

- Allow users to find safest path home.
- Turns out there is much more crime than expected.
- Public buildings aren't too abundant.
- This program will help guide the people using it to the right place at the right time.



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Osnaldy Vasquez

Data Science Final Project

Spring 2016



The crime rate between Chicago and Louisiana and if weather affects the crime rate.

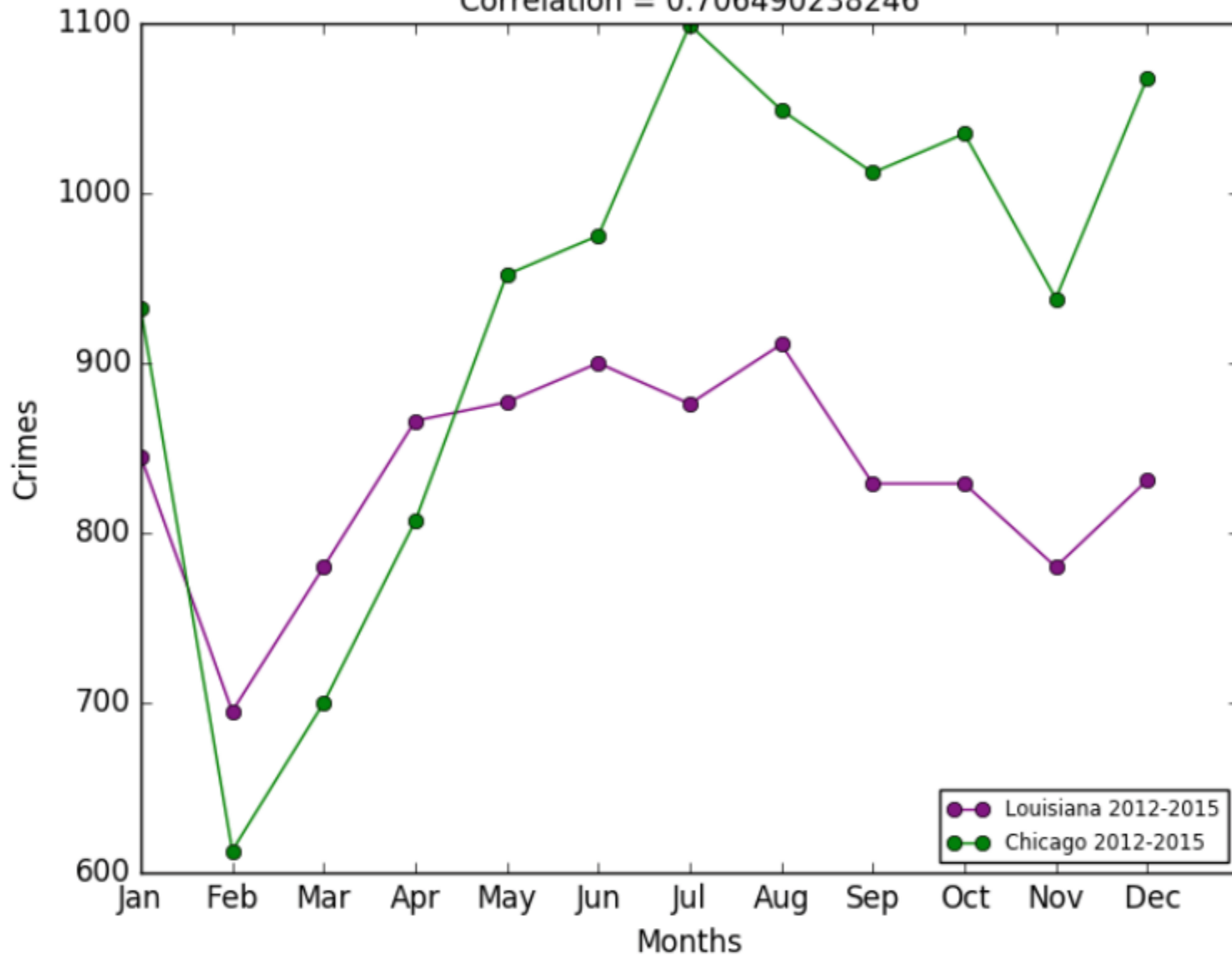
In this project we will learn about the crime rate between Chicago and Louisiana for the years of 2012 to 2015.

Team

Osnaldy Vasquez

- In this project I worked by myself. I am the one who created it.

Usnaldy Vasquez
Crime Correlation between Chicago and Louisiana for 2012 - 2015
Correlation = 0.706490238246



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Under The Weather

Does temperature affect crime? *(Minimized)

BY EDGAR
LUCERO

Graduation Date: June 2nd, 2016

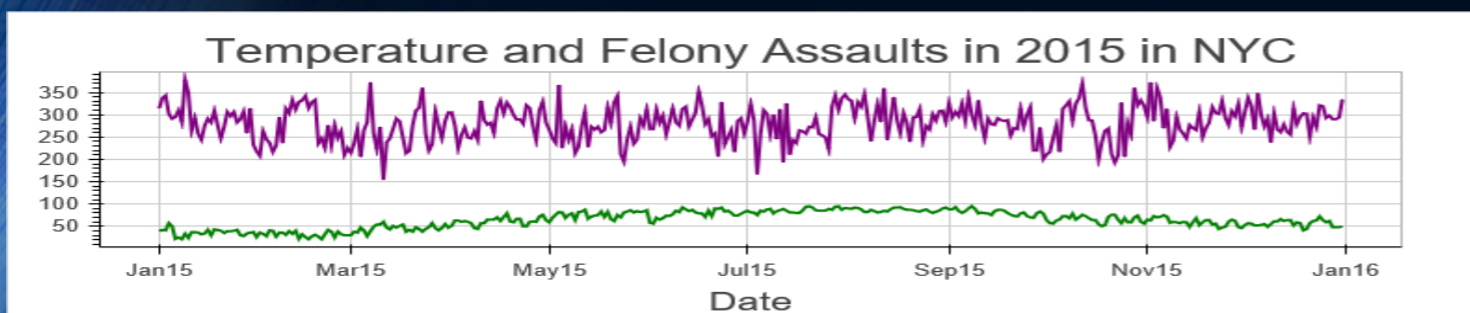
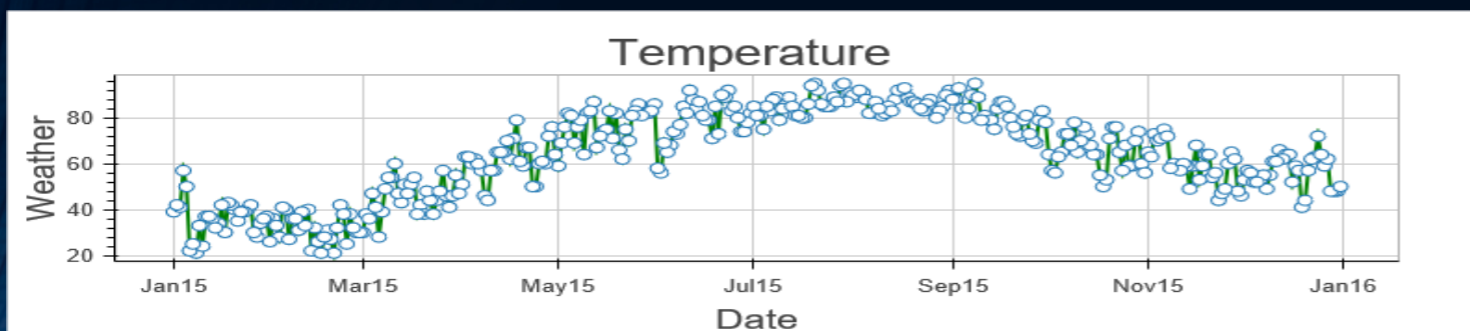
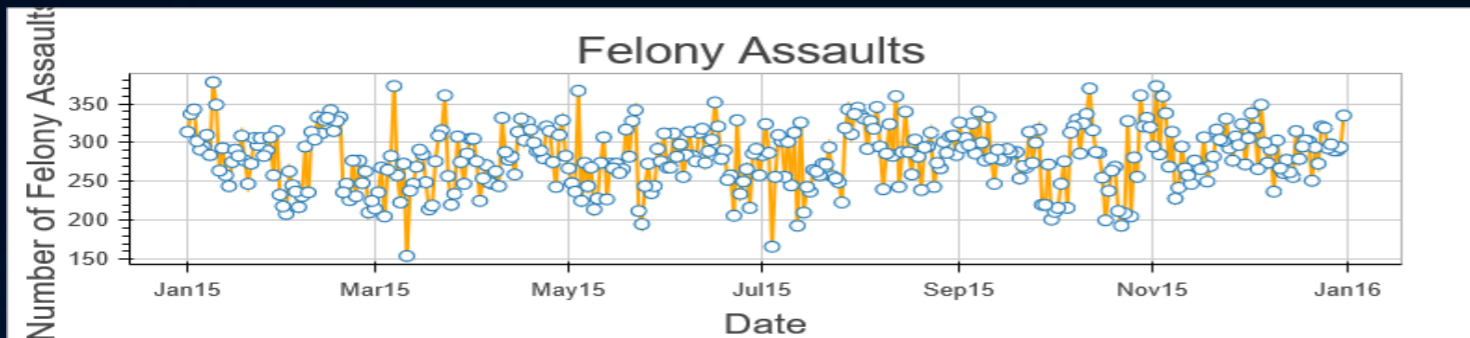
Future General Motors Software Developer



Under The Weather

The Question: Does temperature affect crime?

- According to the data, there was little to no correlation between the felony assaults and temperature.
- Felony assaults in 2015 in NYC varied throughout. There was conclusive rise or decline correlating with the temperature
- My original hypothesis had been that there would be some correlation between the two, however, there are other missing elements that could be analyzed as well to full confirm the conclusion above.



By Edgar Lucero

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ECONOMIC METRICS AND STEM BACHELOR'S DEGREES

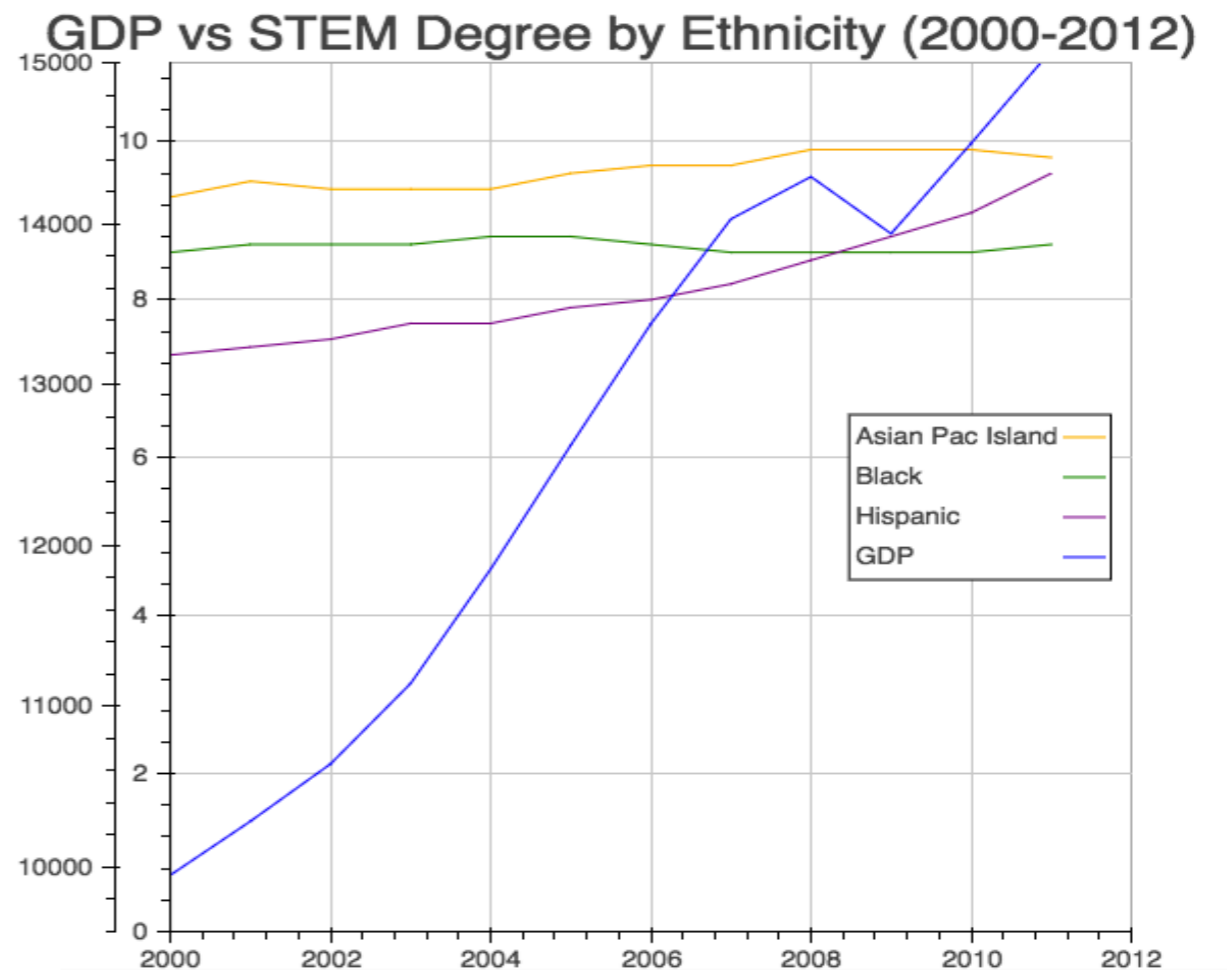
By Elaine Burchman, Lehman 2017
Summer iOS intern



GDP, UNEMPLOYMENT, HOUSEHOLD SAVINGS DATA COMPARED TO STEM ENROLLMENT

I attempted to compare student enrollment data with economic trends, answering whether there is a connection between increase in GDP, unemployment, and/or household savings and enrollment for STEM fields. If so, with whom was this connection?

My most surprising finding was that the correlation was over .9 for GDP and female, male, and Hispanic science and engineering degree recipients, while the correlation was -.96 for white engineers.



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Employment V.S Unemployment

Creator: Antonio Peralta
Graduation Date: June/2017



Employment V.S Unemployment

Project Discovery and Conclusions

- Employment in New York State has been changing over the years where as you can see it has it ups and downs.
- The Unemployment Rate is also changing throughout the years where in 2010 hit a really high rate but has been dropping down all the way through 2014
- Both the statistics data of unemployment and employment shows how new york state labor is affected throughout these years.



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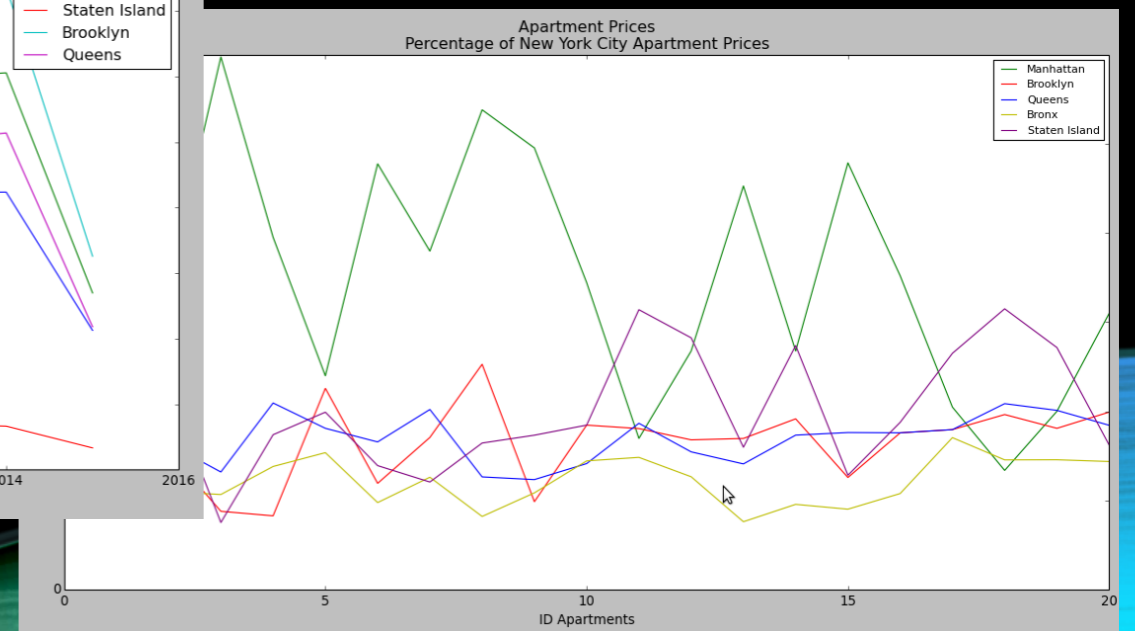
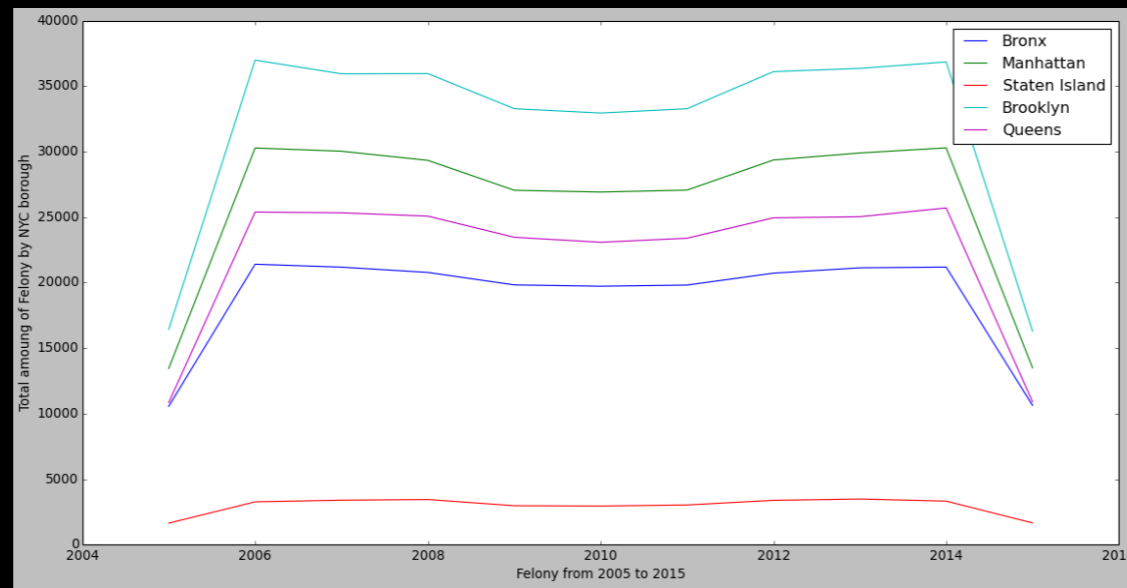
NYC CRIME DATA & APARTMENT PRICES.

By:

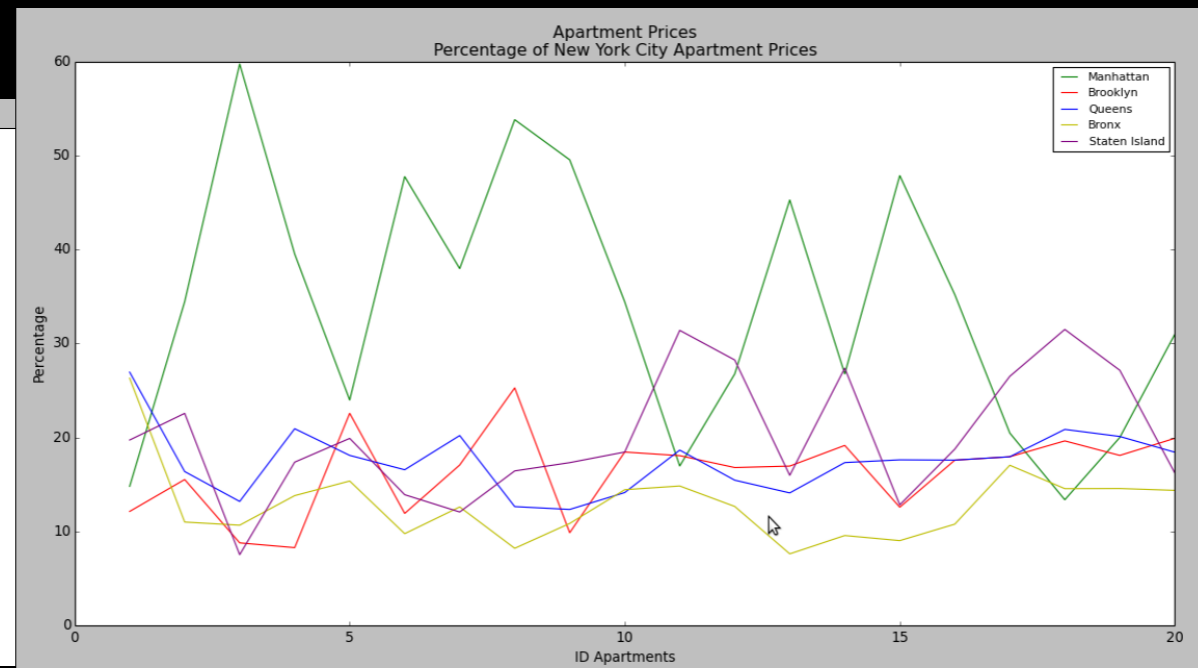
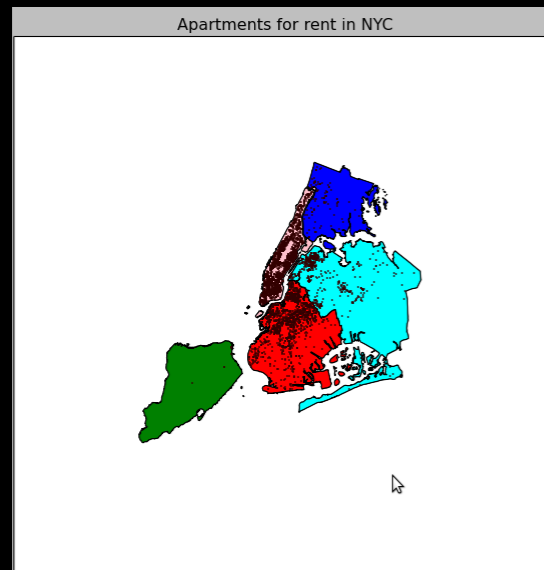
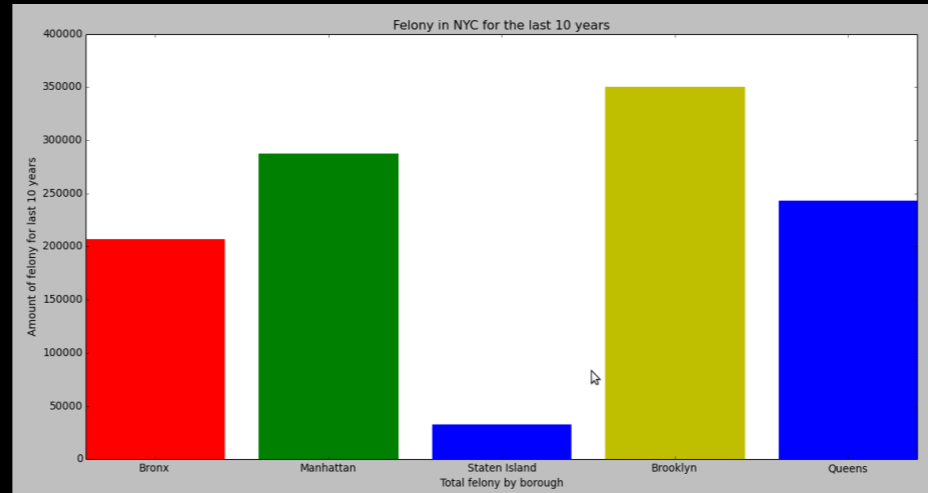
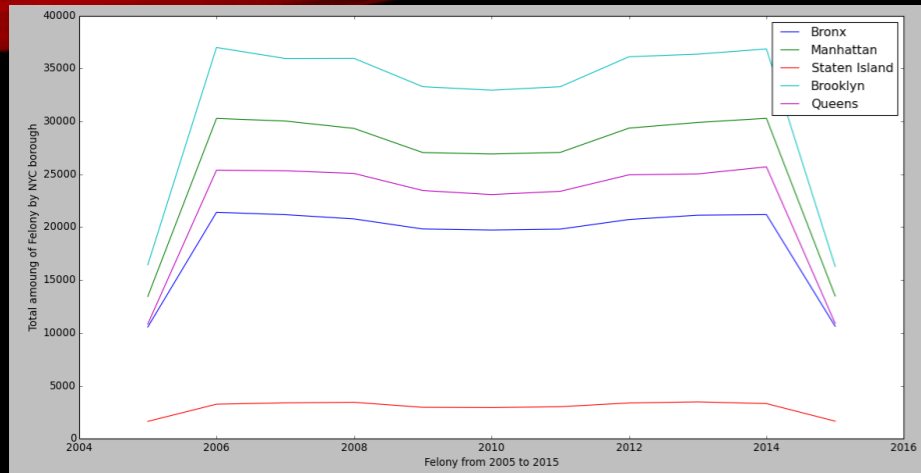
Rosanna De Leon

&

Yelso Yanez



NYC CRIME DATA & APARTMENT PRICES



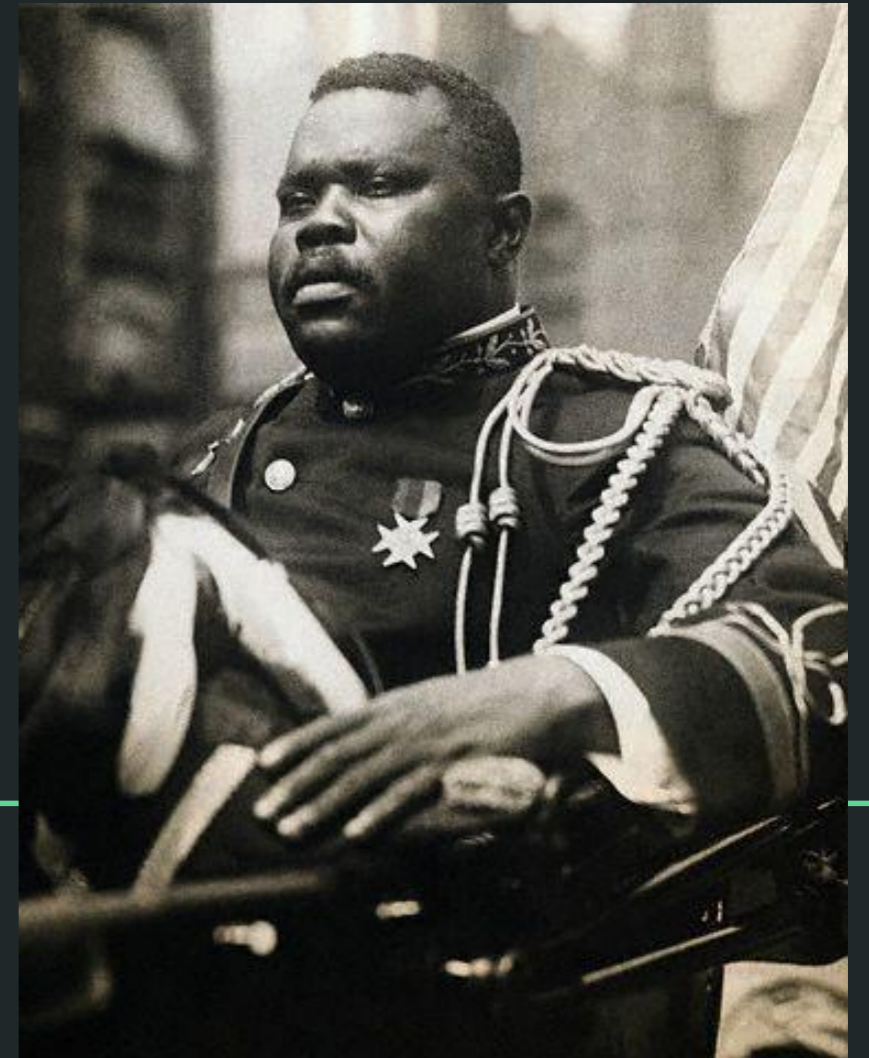
- What is the historical Data Crime in NYC?
- What Borough is safer to live in?
- What is the borough with the majority of felony incidents?
- Do the crime statistics affect the price of apartments?

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Migration of Language and Income in NY

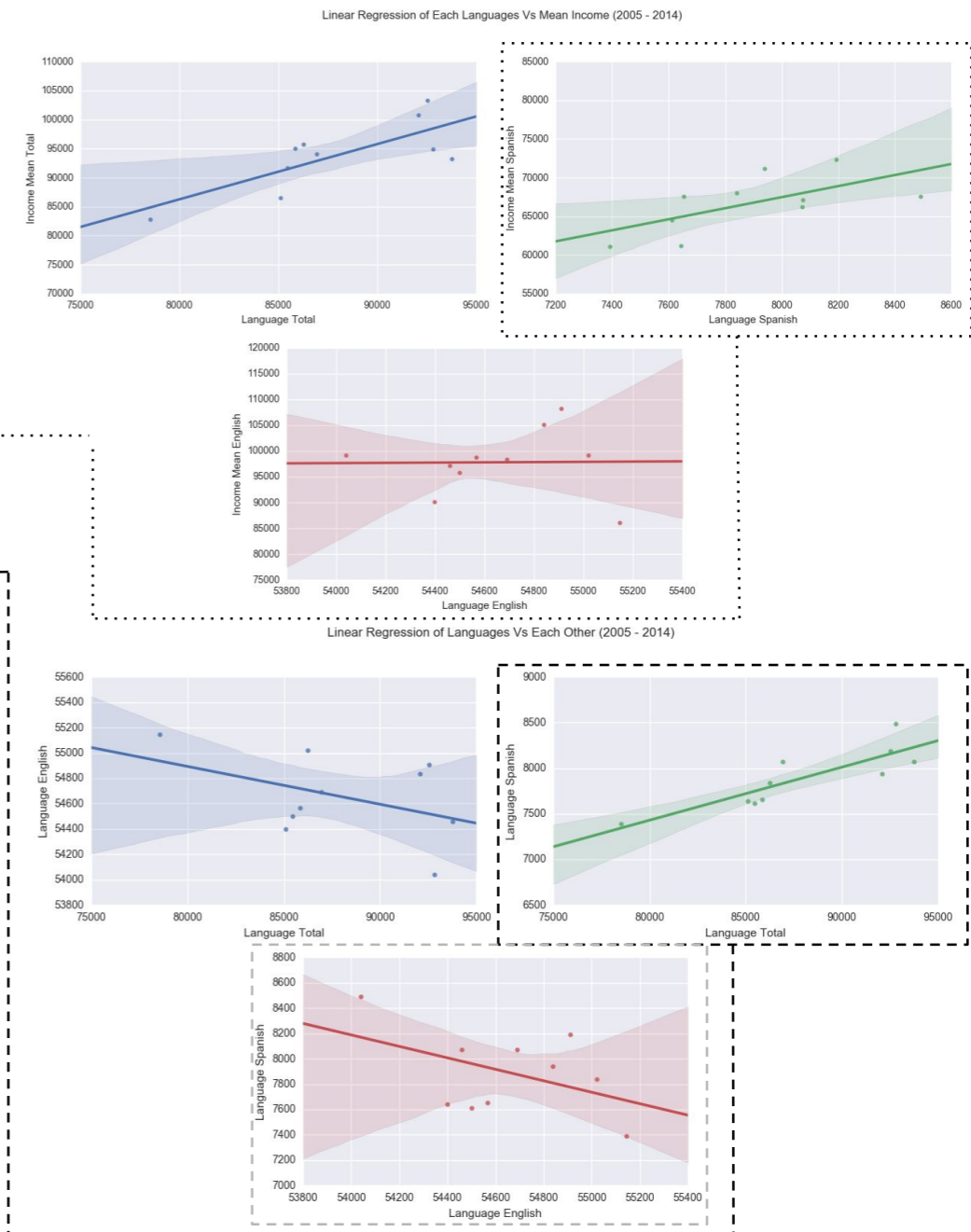
By Josue Rojas
Github - [josuerojasrojas](#)
Grad. Year - 2017



Marcus Garvey represents an idea of nationalism for African Americans where he advocates self-segregation for the benefit of his people. A perfect image for this project because I am trying to show evidence for auto-segregation where people migrate or move around where they feel they share a common characteristic to those around them.

A cause of human migration has always been where it is most beneficial to them. Either by natural or or unnatural reasons. It is empirical then that there exist a relationship between migration, income, and language, oh so I thought.

- My results was an ill-define answer that showed a vague relationship between income, language, and migration in NY.
- It was clear though that an increase of people speaking spanish has a positive relationship on their average income.
- I also found that an increase of total people, increases the amount of spanish speakers and not so much for english speakers.
- I tried to map the locations using public school data but it showed lack of movement making my theory inconclusive.
- To solve my questions I was faced with many fallacies in my data so I concluded that without previous locations of people I cannot show that people migrate together in a auto-segregation method.
 - But I can show that there is a positive relationship between average income and # of spanish speakers while for english speakers the income average is higher but stays constant with the increase of people.



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The effects of weather in production of apple and price change

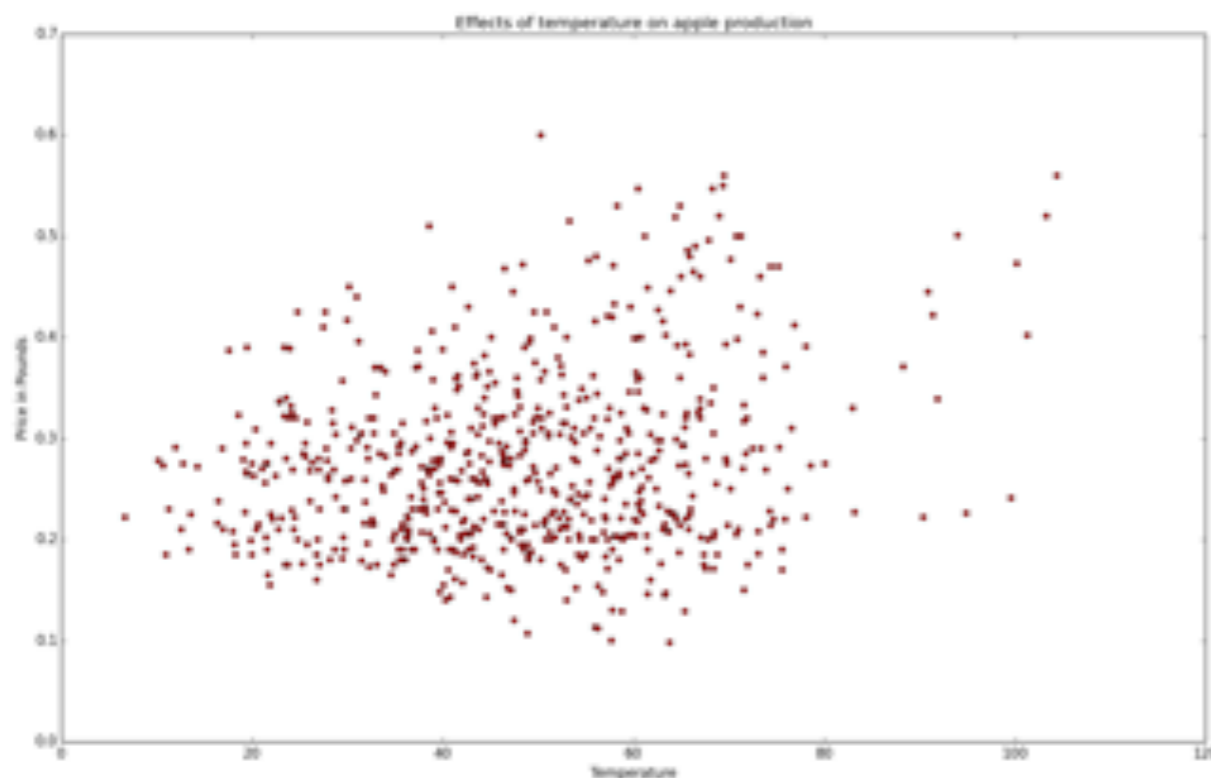
RODNY PEREZ

GRADUATION DATE: FALL 2016



I WILL BE DOING AN INTERNSHIP AS A SOFTWARE DEVELOPER FOR APPLE INC. THIS
SUMMER 2016. AFTER GRADUATION, I PLAN TO GET A FULL-TIME JOB AS A SOFTWARE
DEVELOPER

Discoveries



- The warmer it is the more expensive the apples.
- Apple's are mostly produced in temperatures between 35F and 50F.
- There is a positive correlation between price and temperature. $r = 22\%$.
- There is a negative correlation between production of apples and price $r = 33\%$.

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Potholes of NYC

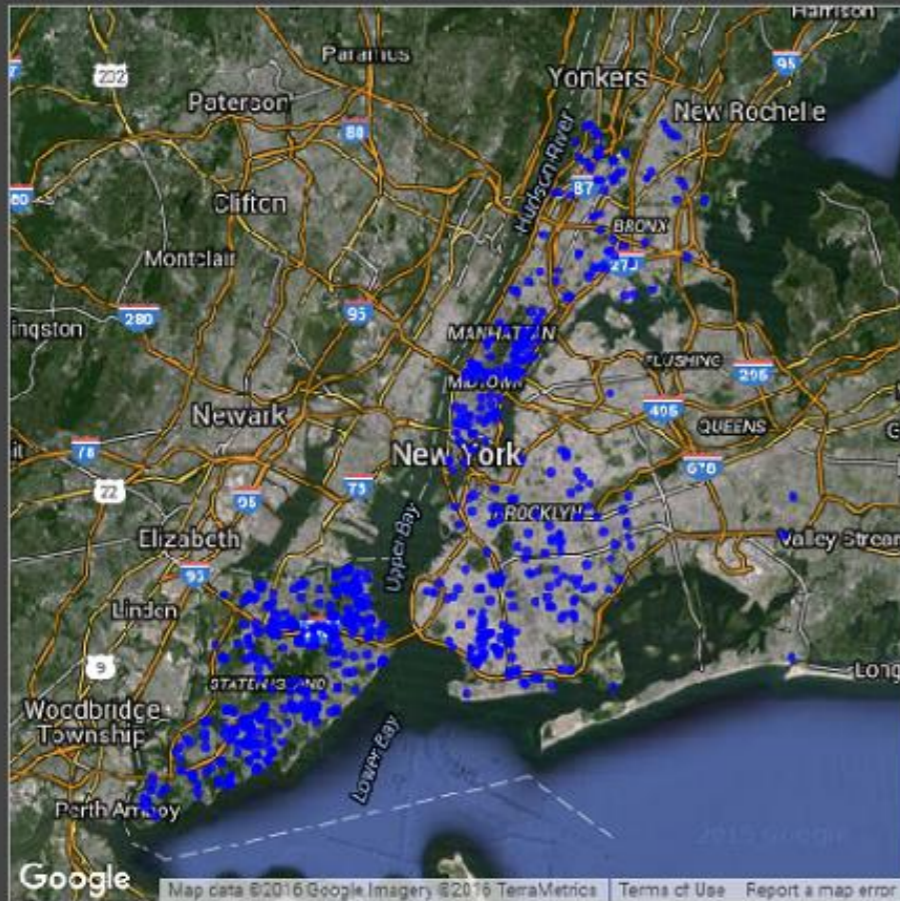
Aurora Koch-Pongsema

Graduation: June '16

Future Technology Analyst at JPMorgan Chase & Co., July '16



Potholes of NYC



- A pothole report stayed open for an average of 4.7 days in 2015
- Queens had the least 'long term' potholes of all boroughs, with only a handful remaining open past three standard deviations from the mean (25.9 Days)

Aurora Koch-Pongsema

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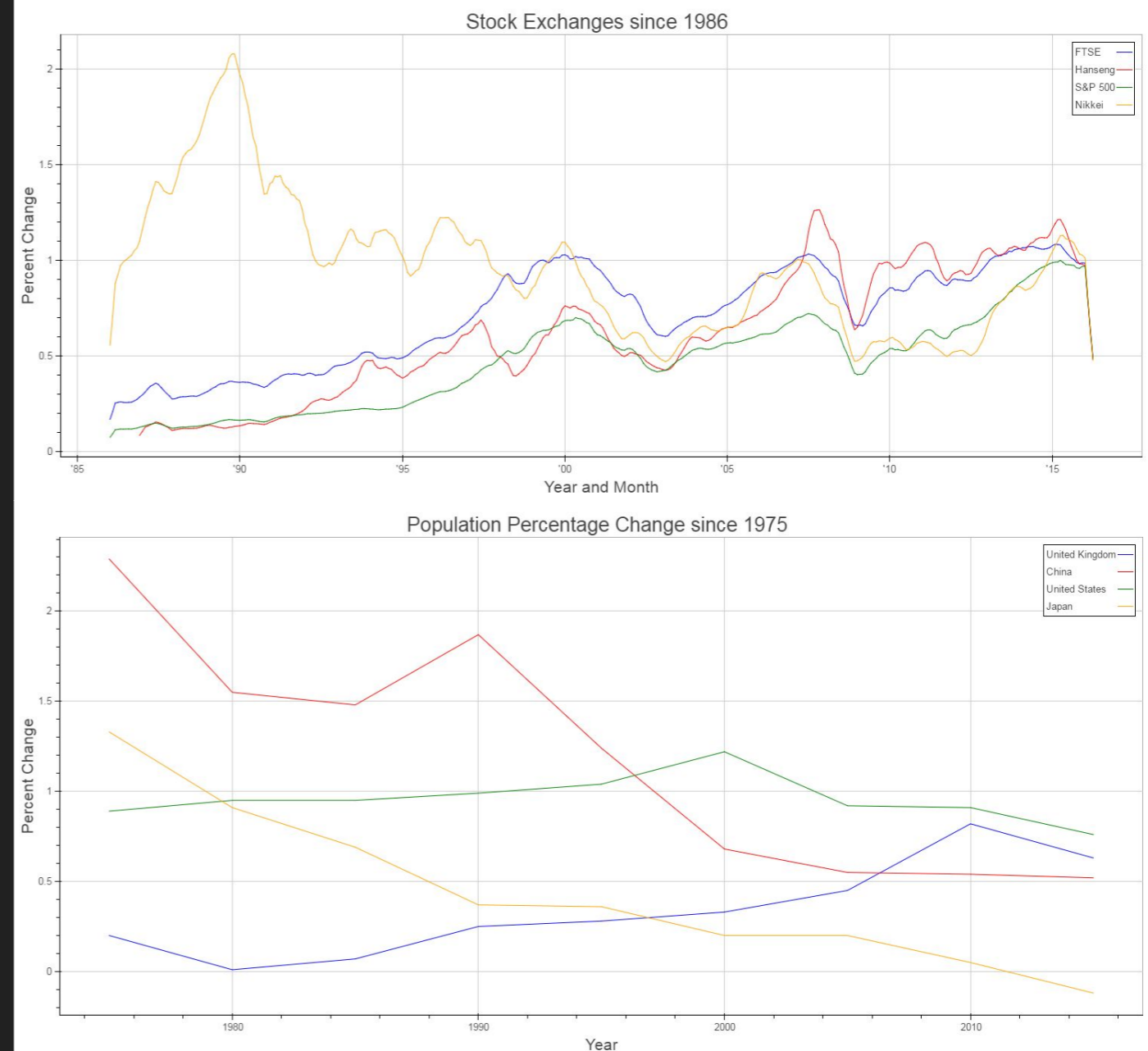
Japan's Lost Decades

Marlon Figueroa

JPMorgan Summer Tech Analyst - Spring 2017

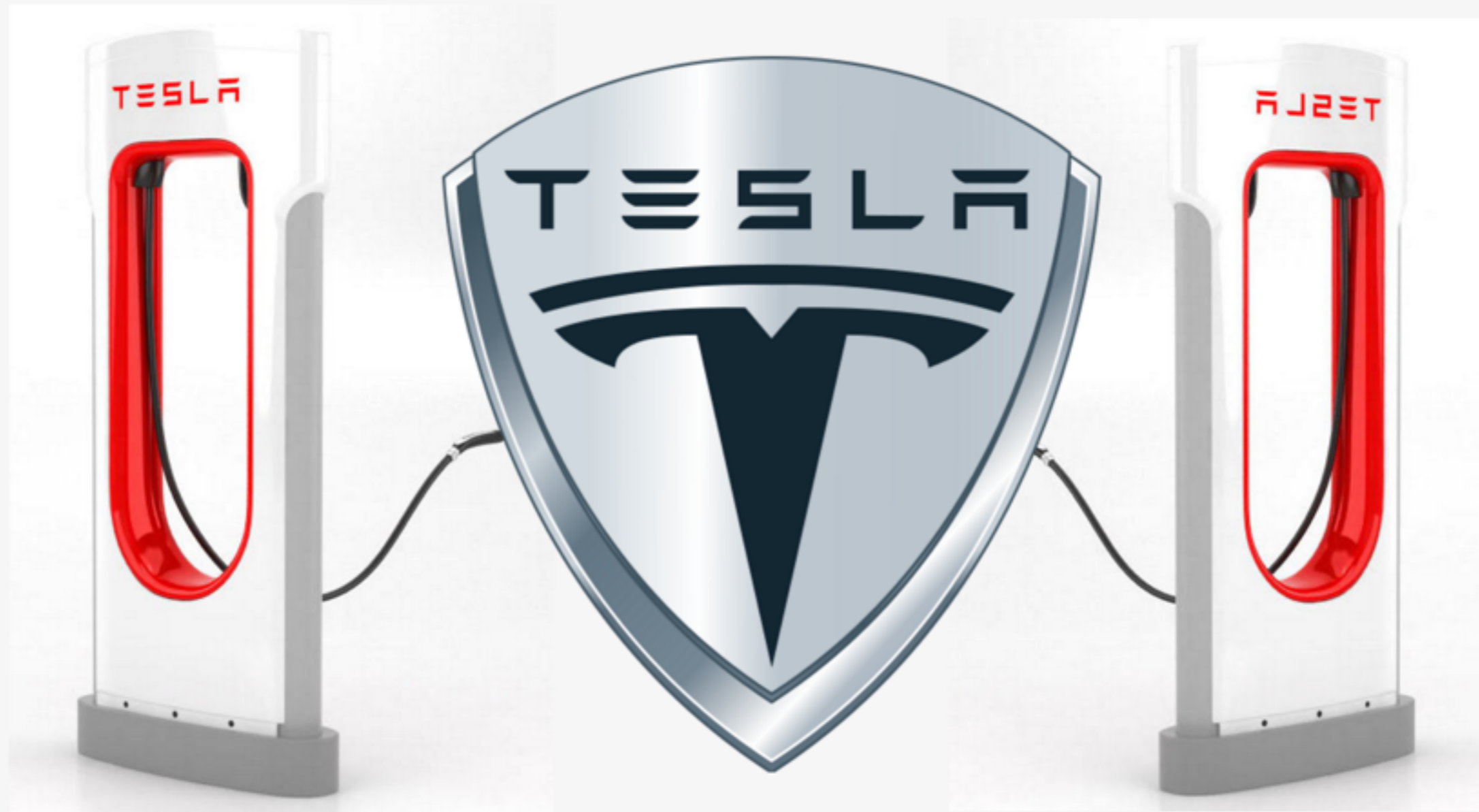
Japan's Lost Decades

- After a bubble collapse in the 80s, Japan's economy never recovered.
- Since then, Japan's Nikkei been trading at a higher level of volatility than its peers, and the economy has significantly underperformed.
- Though the overall world population growth has been slowing, Japan's population is plummeting.
- Japan is a tiny country with very crowded cities. Isn't less people a good thing?



90 Second Previews

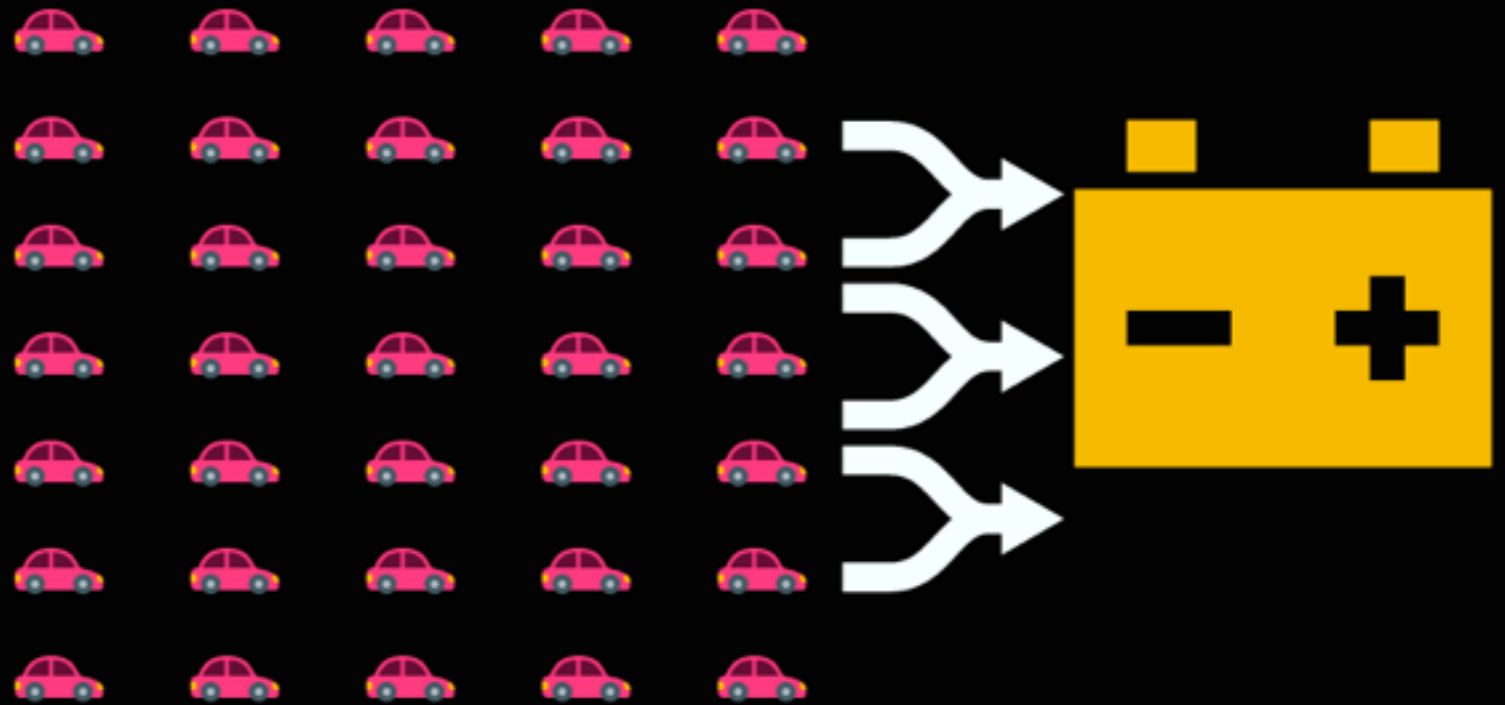
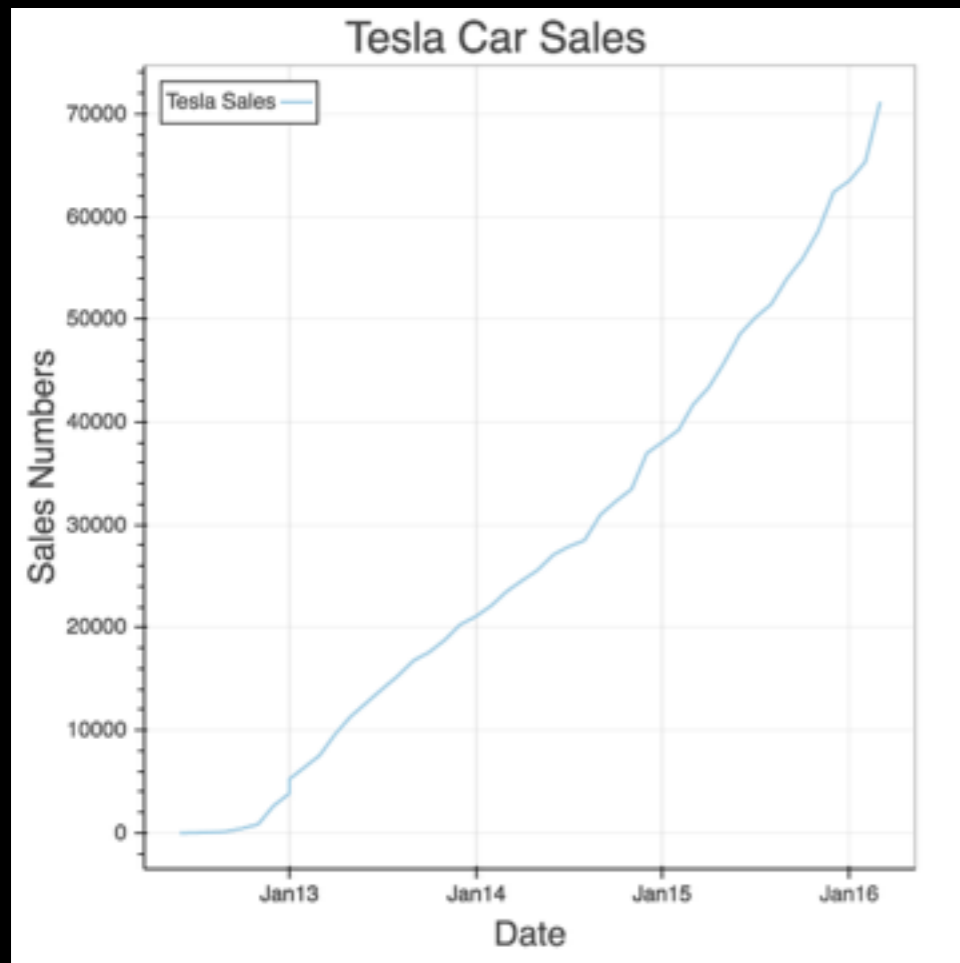
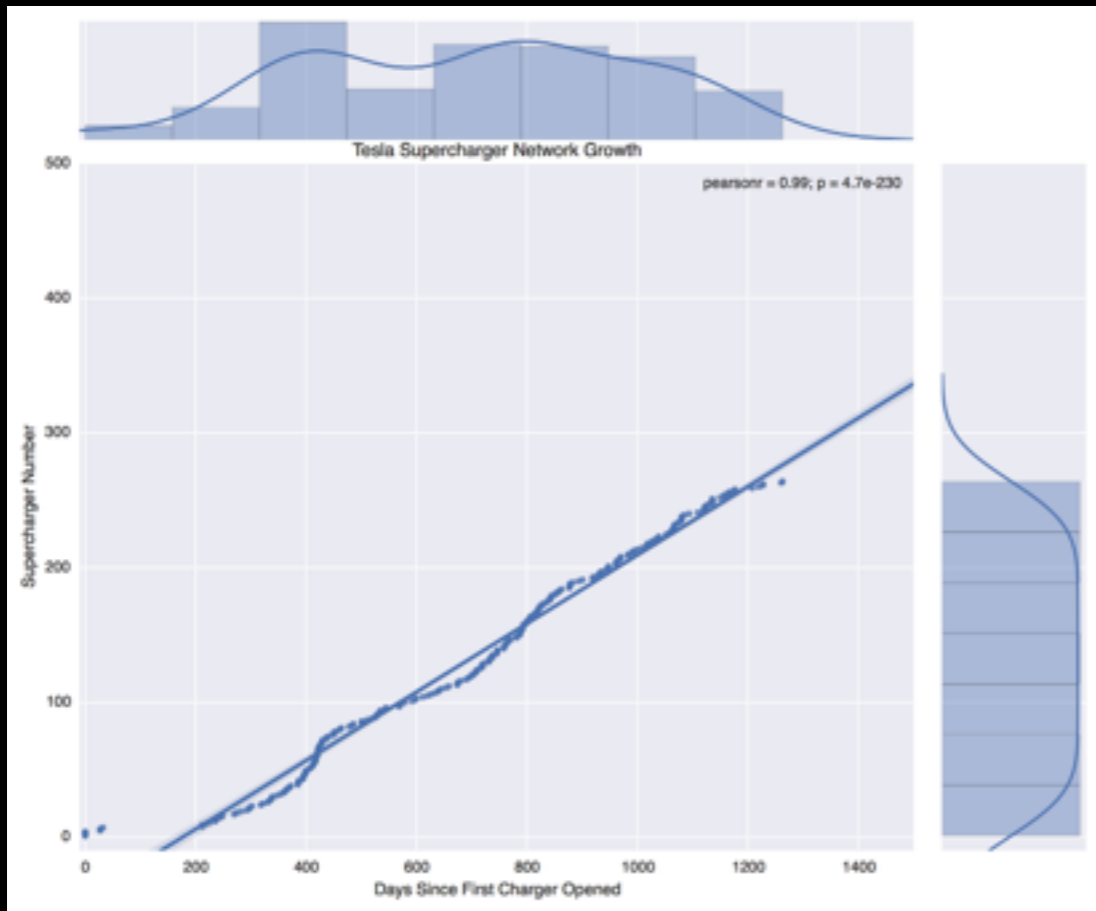
1. Roberto Martinez
2. Samantha Cardi
3. Steven Caraballo
4. Mark Czuy
5. Anthony Beltran
6. Tajh McDonald
7. Francisco Perez
8. Yusef Abdulla
9. Osnaldy Vasquez
10. Edgar Lucero
11. Elaine Burchman
12. Antonio Peralta
13. Rosanna De Leon Rodriguez & Yelso Yanez
14. Josue Rojas
15. Rodny Perez
16. Aurora Koch-Pongsema
17. Marlon Figuero Lopez
- 18. Nicholas Wilk**



Tesla Motors

Supercharger Network Growth

By Nicholas Wilk



Poster Session