Yelp Pizza Restaurants' Review Analysis

Group2

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Introduction

- Yelp

  1. Yelp is a local business directory service and review site with social networking features. It allows users to give ratings and review businesses.

  2. Recently, Yelp has released some of its 171 million reviews to the public as a part of the “Yelp Dataset Challenge.”

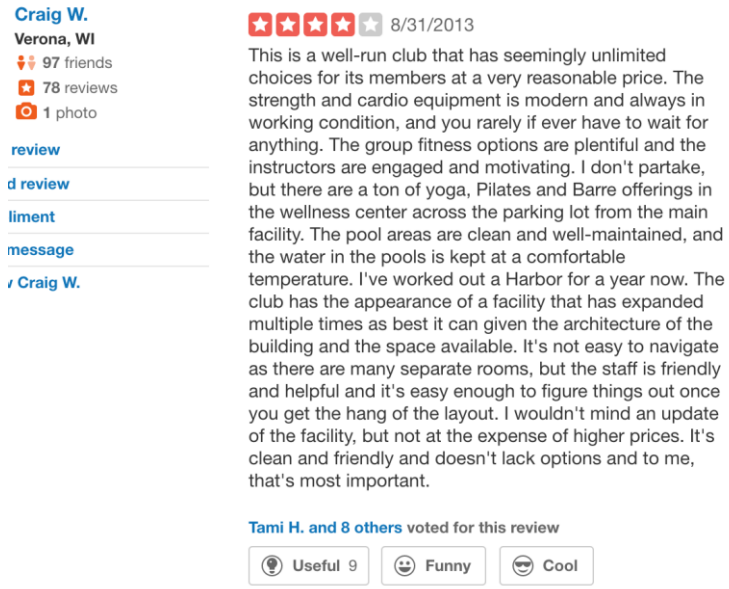
- Dataset description: JSON files

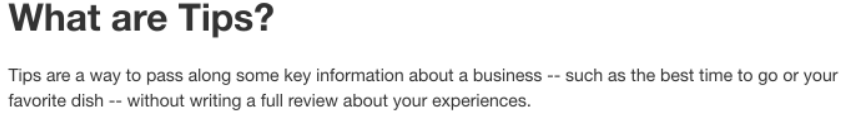
  1. *review json*: Contains 6,685,900 reviews

  2. *business.json*: Contains information about 192,609 businesses.

  3. *user.json*: Contains information about 1,637,138 million users.

  4. *tip.json*: Contains information about 1,223,094 tips written by users on a business



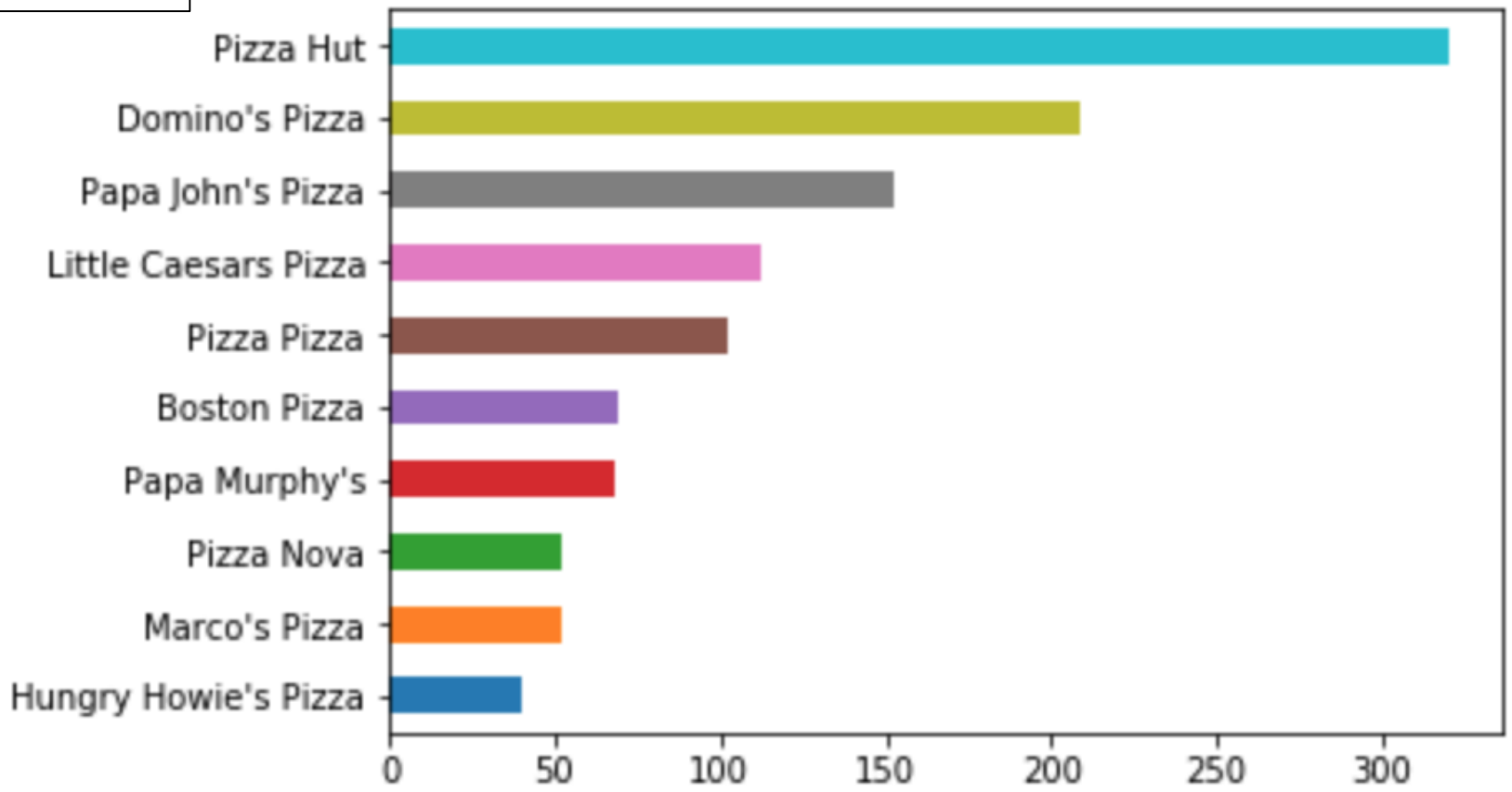


Goal

- From the brand perspective, provide useful, analytical insights to pizza restaurant owners, especially the Top 1 chain restaurant Pizza Hut on Yelp.

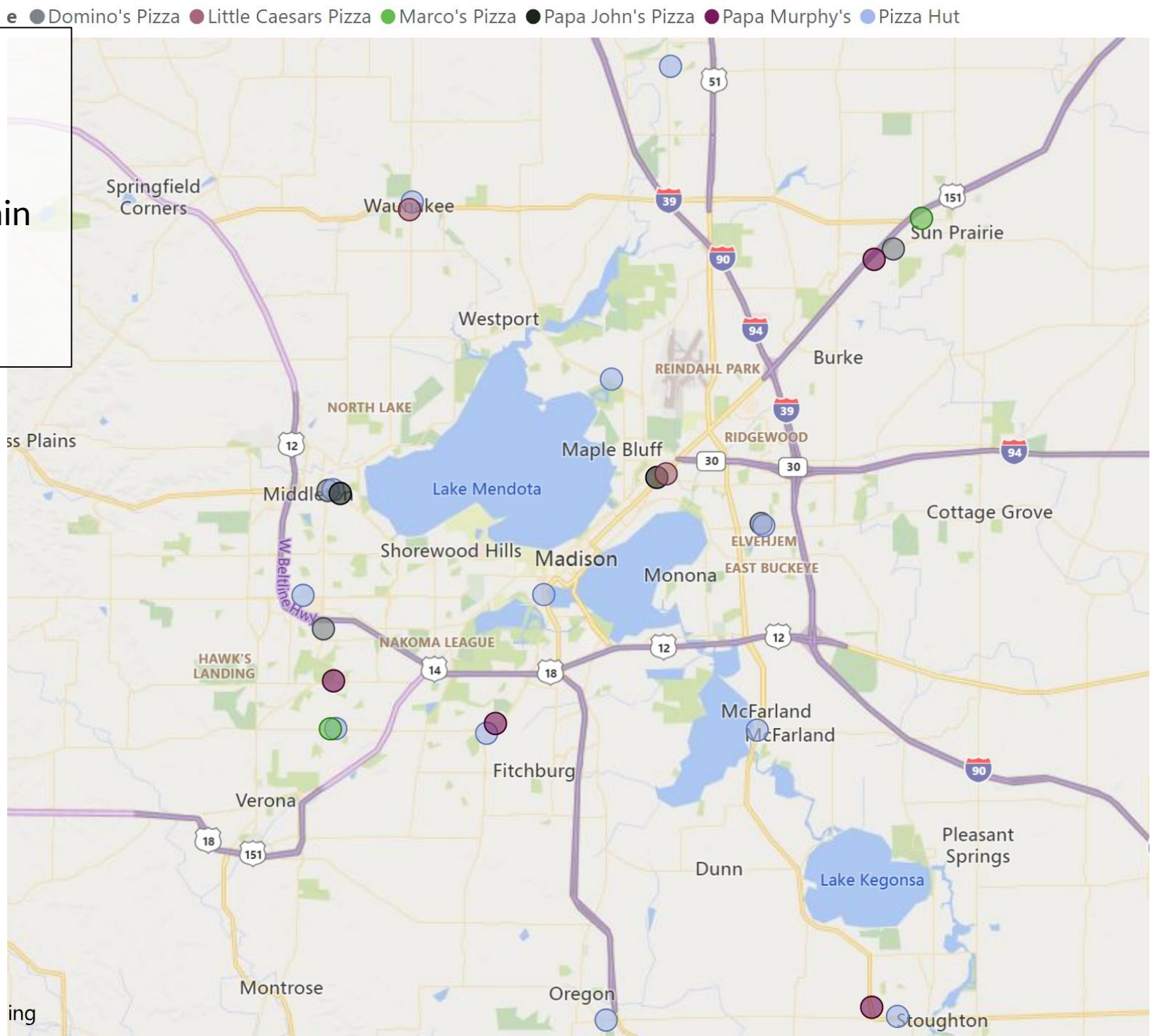
- Build a web application that visualizes our analysis and makes it easier to understand for Top 10 pizza restaurant owners in Wisconsin.

Top 10 Pizza


Pizza Hut
Domino's Pizza
Papa John's Pizza
Little Caesars Pizza
Pizza Pizza
Boston Pizza
Papa Murphy's
Pizza Nova
Marco's Pizza
Hungry Howie's Pizza
0
50
100
150
200
250
300

Top 10 Pizza

- In Madison
- Only six of top 10 pizza restaurant chain spread in Madison



Top 10 Pizza

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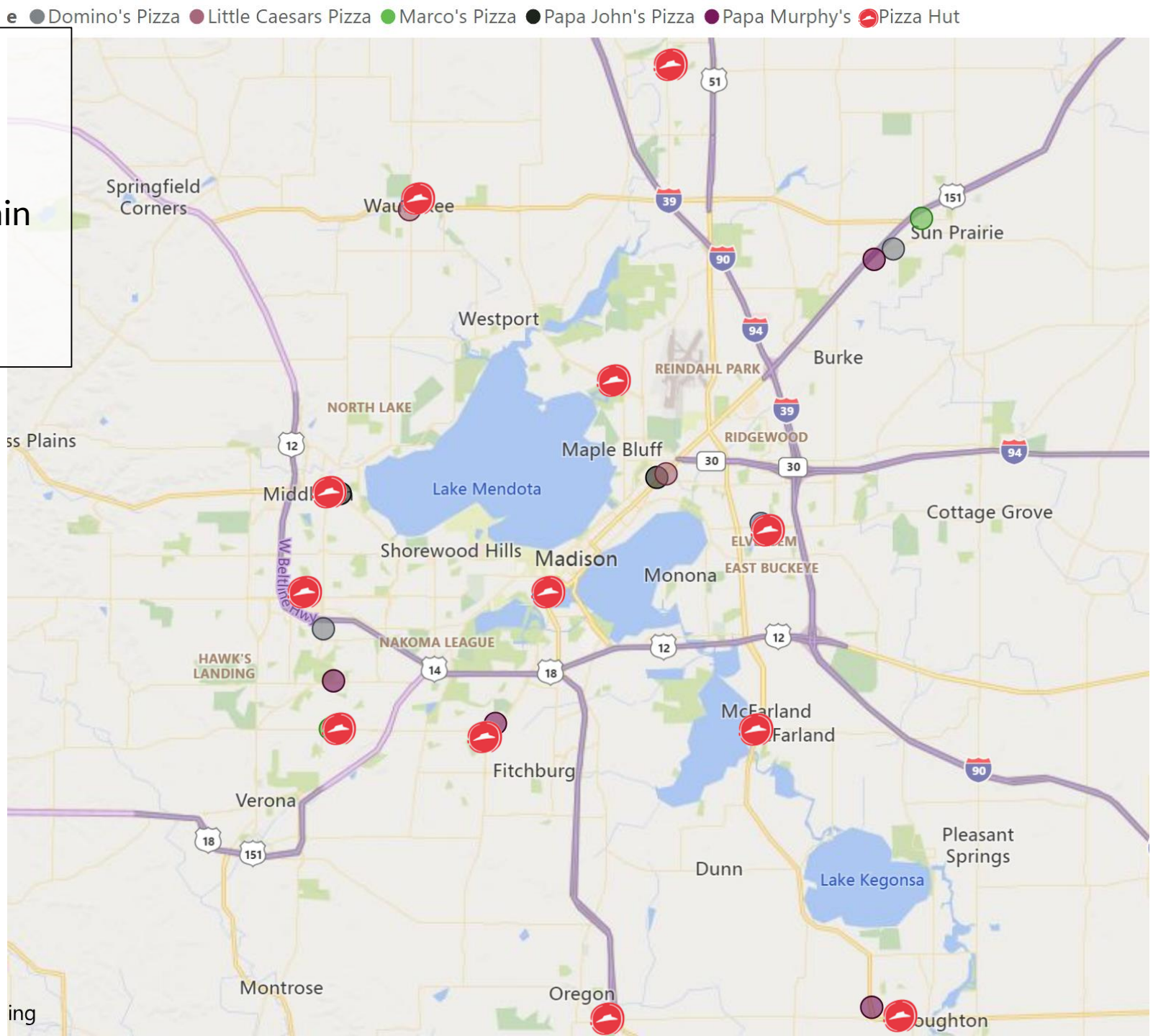
- Pizza Hut has twelve chains here



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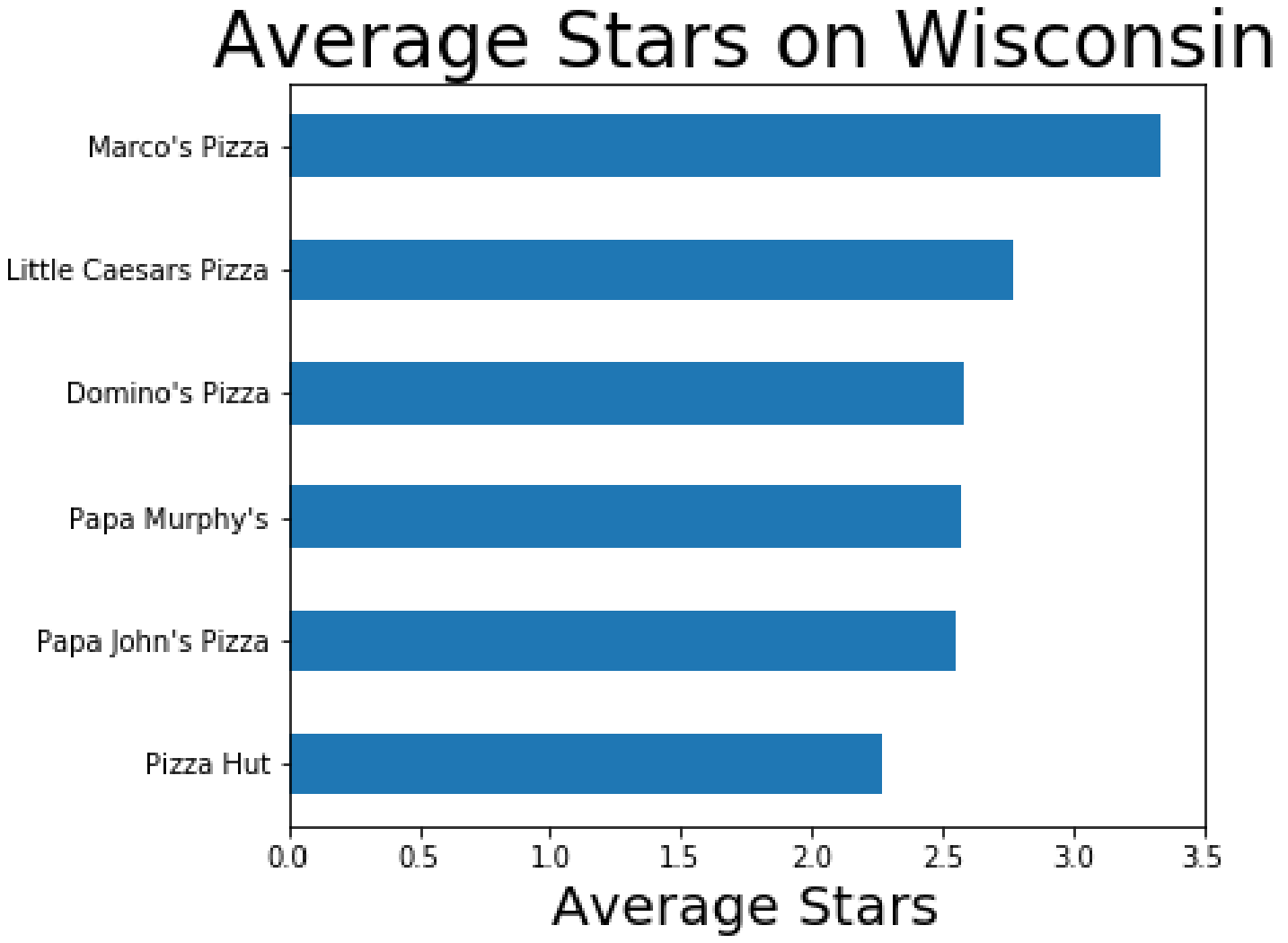

Pizza Hut

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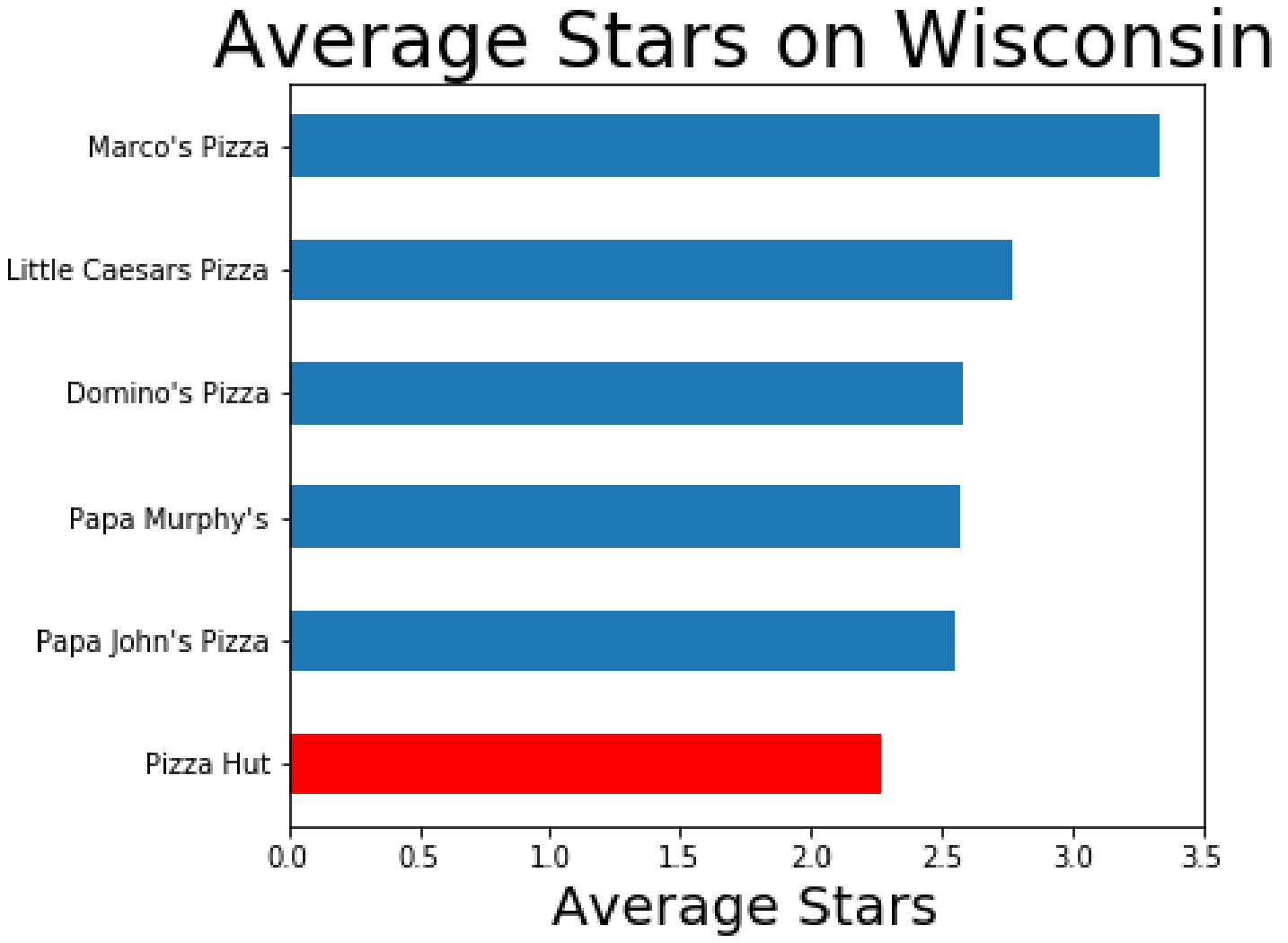
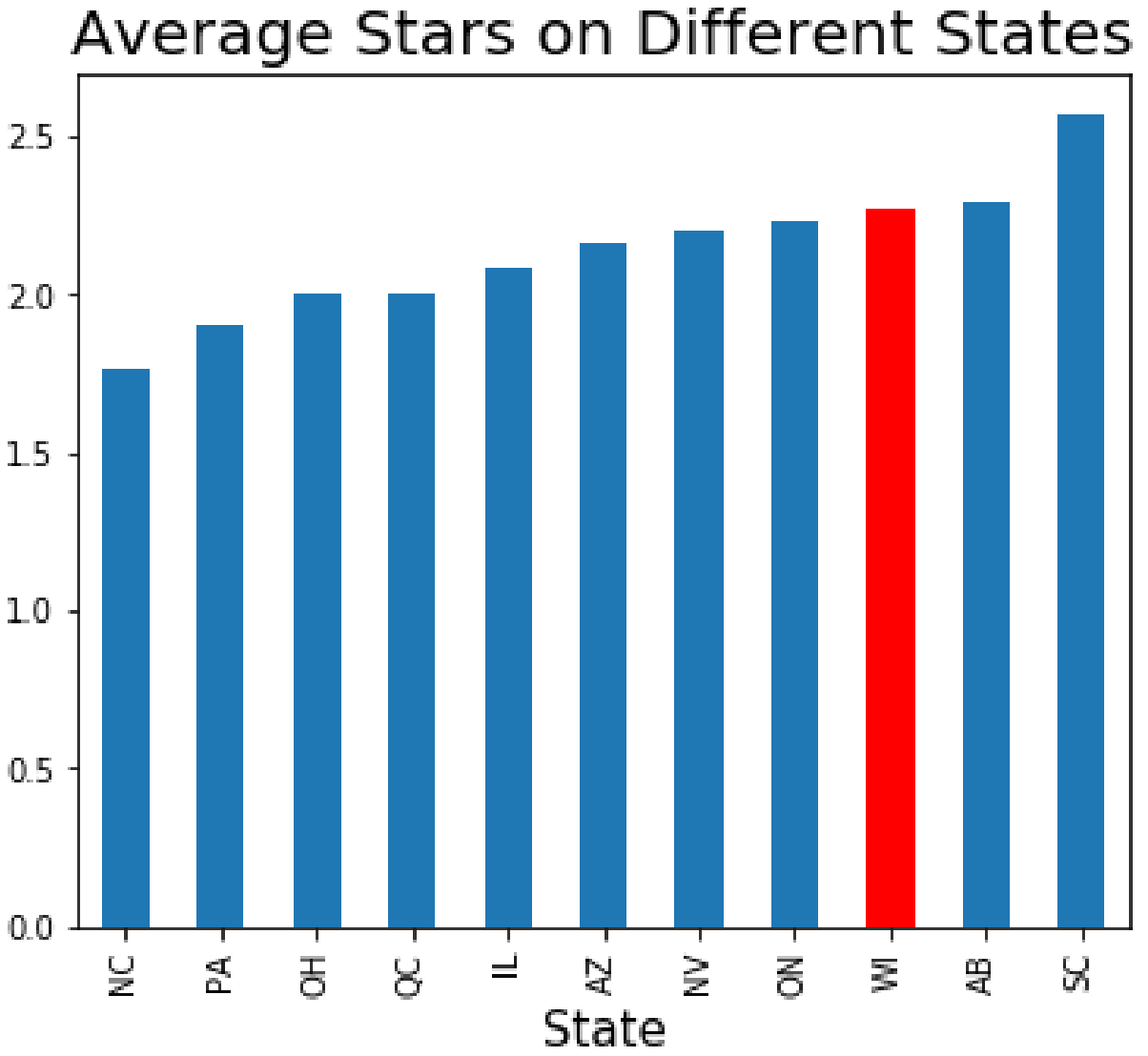
- Pizza Hut has twelve chains here
- Pizza Hut does not preform well comparing to other pizza restaurant chains in Madison



Pizza Hut

- In Madison
- Only six of top 10 pizza restaurant chain spread in Madison
- Pizza Hut has twelve chains here
- Pizza Hut does not preform well comparing to other pizza restaurant chains in Madison
- Around the nation
- Stars of reviews are close to each other except in South Carolina



Pizza Hut

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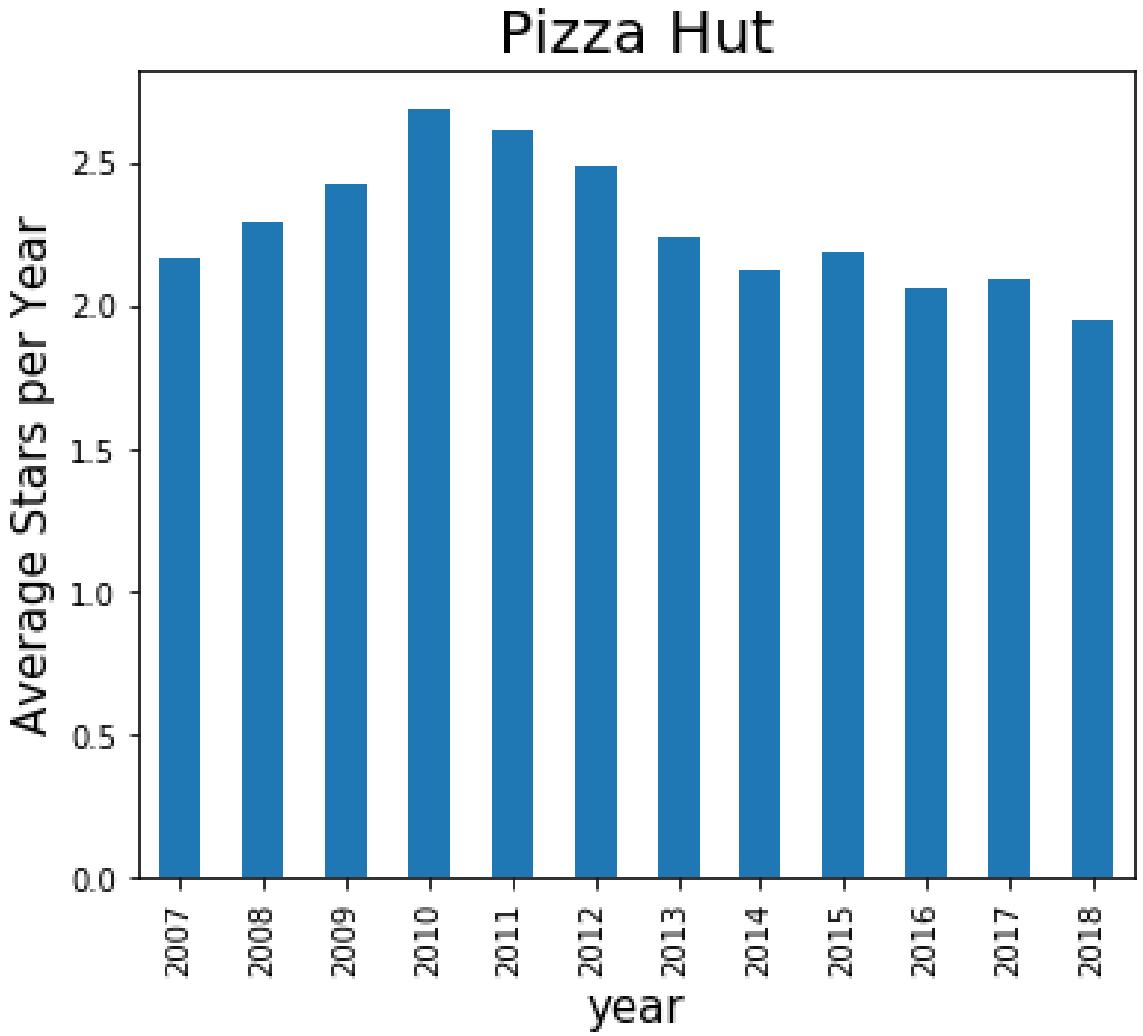
- Annual Performance
- Substantial downward pressure from the reviews to Pizza Hut



Pizza Hut

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- Only six of top 10 pizza restaurant chain spread in Madison
- Pizza Hut has twelve chains here
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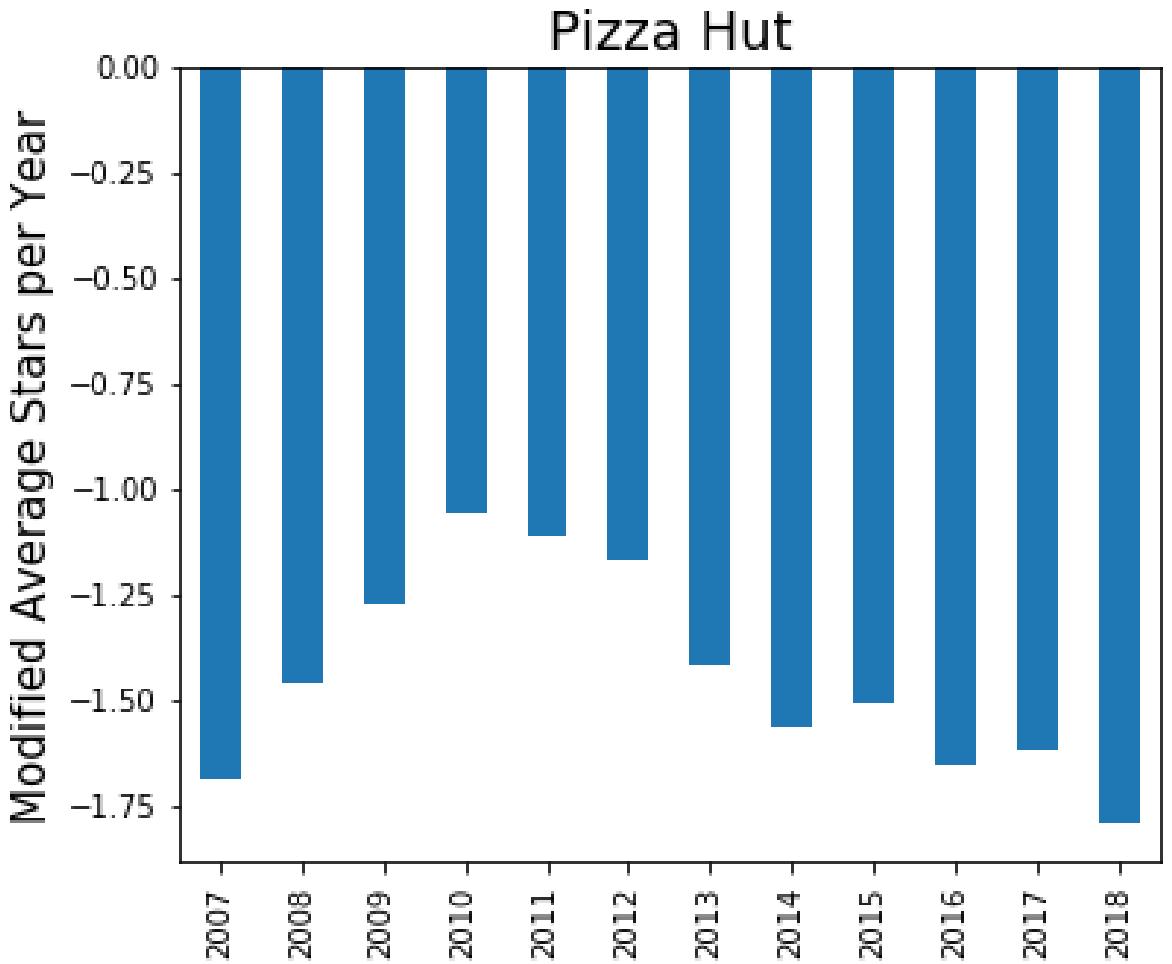
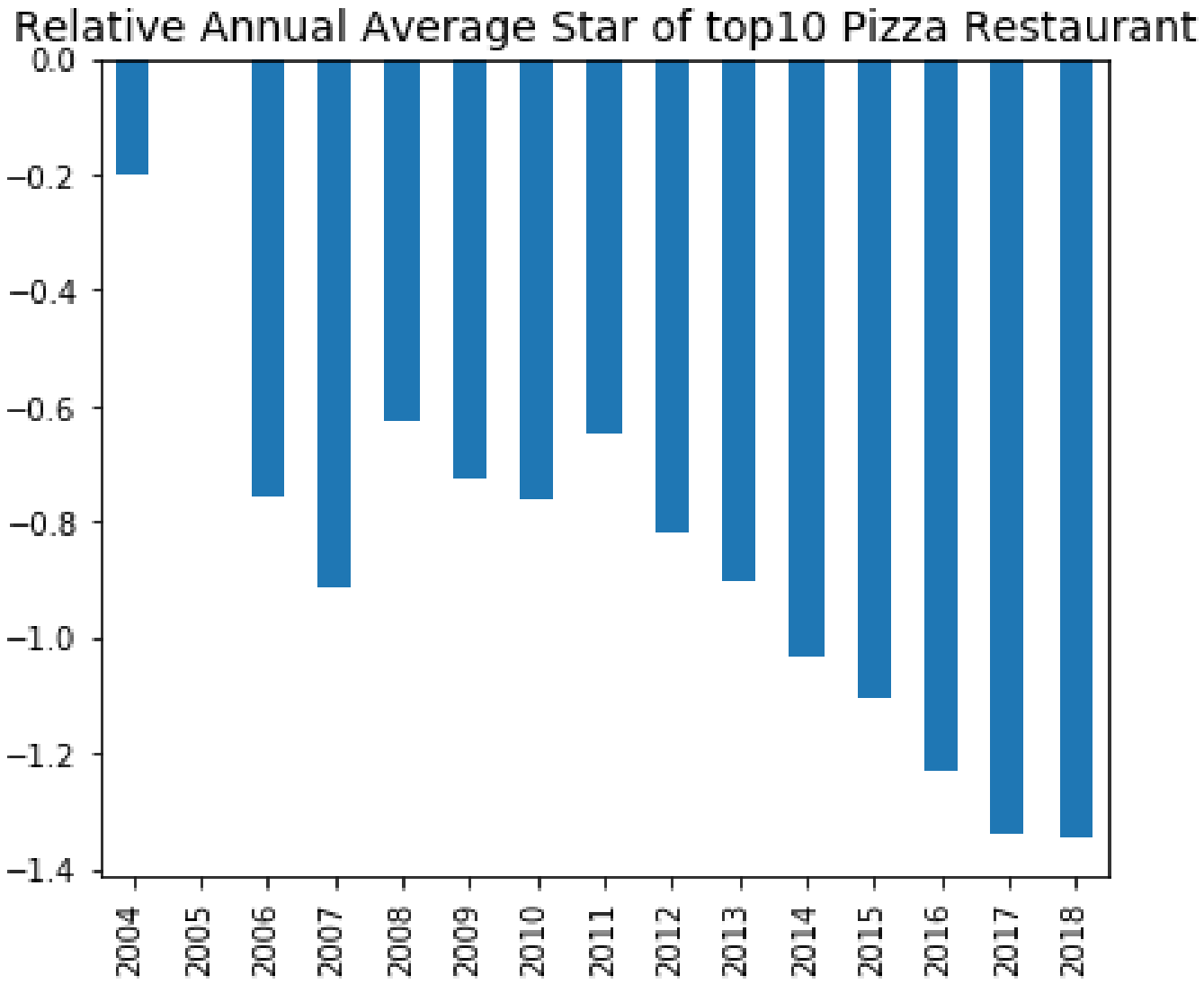
- Annual Performance
- Substantial downward pressure from the reviews to Pizza Hut
- After subtracting the annual average star of all reviews to the pizza restaurant



Top 10 Pizza

- In Madison
- Only six of top 10 pizza restaurant chain spread in Madison
- All pizza restaurant franchise receive blow average reviews from their customers



Review Data Cleaning -- Pizza Hut

- Select the reviews from top 10 pizza restaurant.
- Get reviews from Pizza Hut
- Change these reviews into sentences

```
[["I've never had a bad experience here.",
  'delivery, pickup, whatever, the food always turns out good, for me.',
  "Yesterday they were my saving grace, when Papa John's let me down SEVERELY.",
  "Pizza Hut quoted me an hour-ish wait time (which is fine when I know about it, not when i'
m promised 30-40 minutes and it ends up being over an hour like PJ's was)...and they were the
re at my house with my piping hot, delicous pizza in about 25 minutes.",
  'LOVE.'],
 ['We order from this Pizza Hut often and always order a very similar order a stuff crust piz
za with chicken, Bacon, and onion on half.',
  'We ordered today and the pizza had onion on the whole thing.',
  "The manager was rude and didn't want to replace the pizza.",
  'After telling him I will come in and talk to the store manager did he change his attitude
toward the situation.'],
```

Get Basic ‘if’ suggestions

If they were not up for delivering that late, a curiosity call would be great so I don't sit at home hungry.

If that is peak, the web servers need to be replaced.

If you want a certain pizza then you'll have to make your voice heard or else they'll stick to their usual pepperoni, supreme, and cheese.

Further Data Cleaning without if sentences

- Pronouns and positive helping verbs
- Sentence pattern (”not only … but also’’=> “… and …”)
- Negative abbreviation => helping verb + not
- Combine negative adv with words behind : not great => notgreat
- Delete punctuation marks
- Combine negative patterns again further :

  not great pizza => notgreatpizza

Further Data Cleaning without if sentences

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- Combine negative adv with words behind : not great -> notgreat

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[[' neverbad experience',
  'delivery pickup whatever food turns good',
  'yesterday saving grace papa johns let severely',
  ' quoted hourish wait time which fine know promised 3040 minutes ends hour like pjs wasand
house piping hot delicous pizza 25 minutes',
  'love'],
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Noun Vocabulary

Word	Count	Word	Count
pizza	5037	location	1426
order	3713	minutes	1382
time	2174	food	1295
delivery	1637	place	1059
service	1566	manager	977

Adj Vocabulary

Word	Count	Word	Count
good	1026	worst	445
great	571	bad	442
first	473	wrong	427
last	465	better	425
well	465	large	422

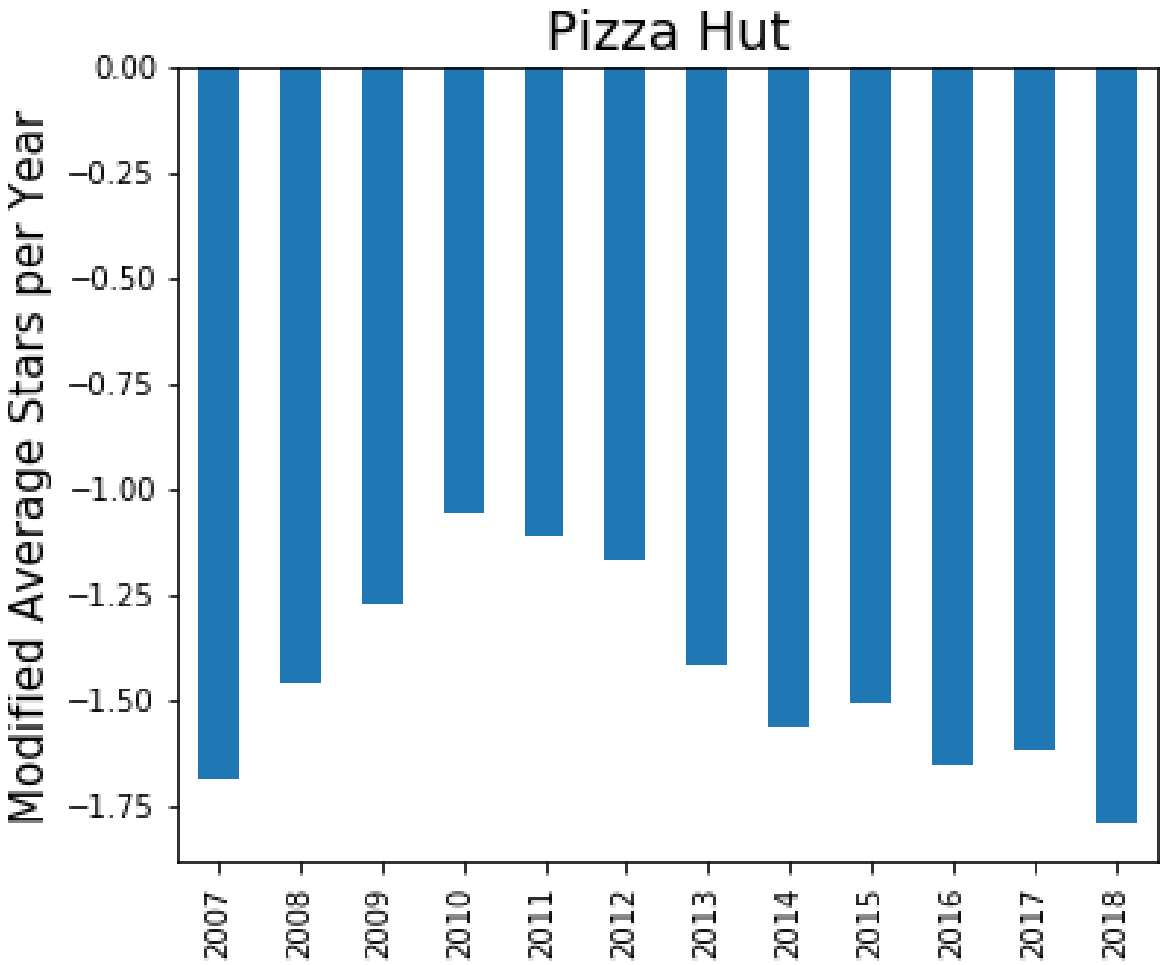
Not—Vocabulary

Word	Count	Word	Count
neverorder	133	notorder	23
neveragain	68	nevereat	22
nothing	50	never	22
nevergo	48	nevercame	21
nevergot	42	notback	20
neverordering	40	notfeellike	19
neverever	36	neverget	19
neverproblem	28	neverreturn	19
neverreceived	24	nevergoing	16
notcare	23	notwastetime	16

Future Plan

- Mining more information from reviews.
- Filter out common and useful information
- Use RNN to acquire a new and reliable exact feedback

- What kinds of reviews we should pay more attention to?



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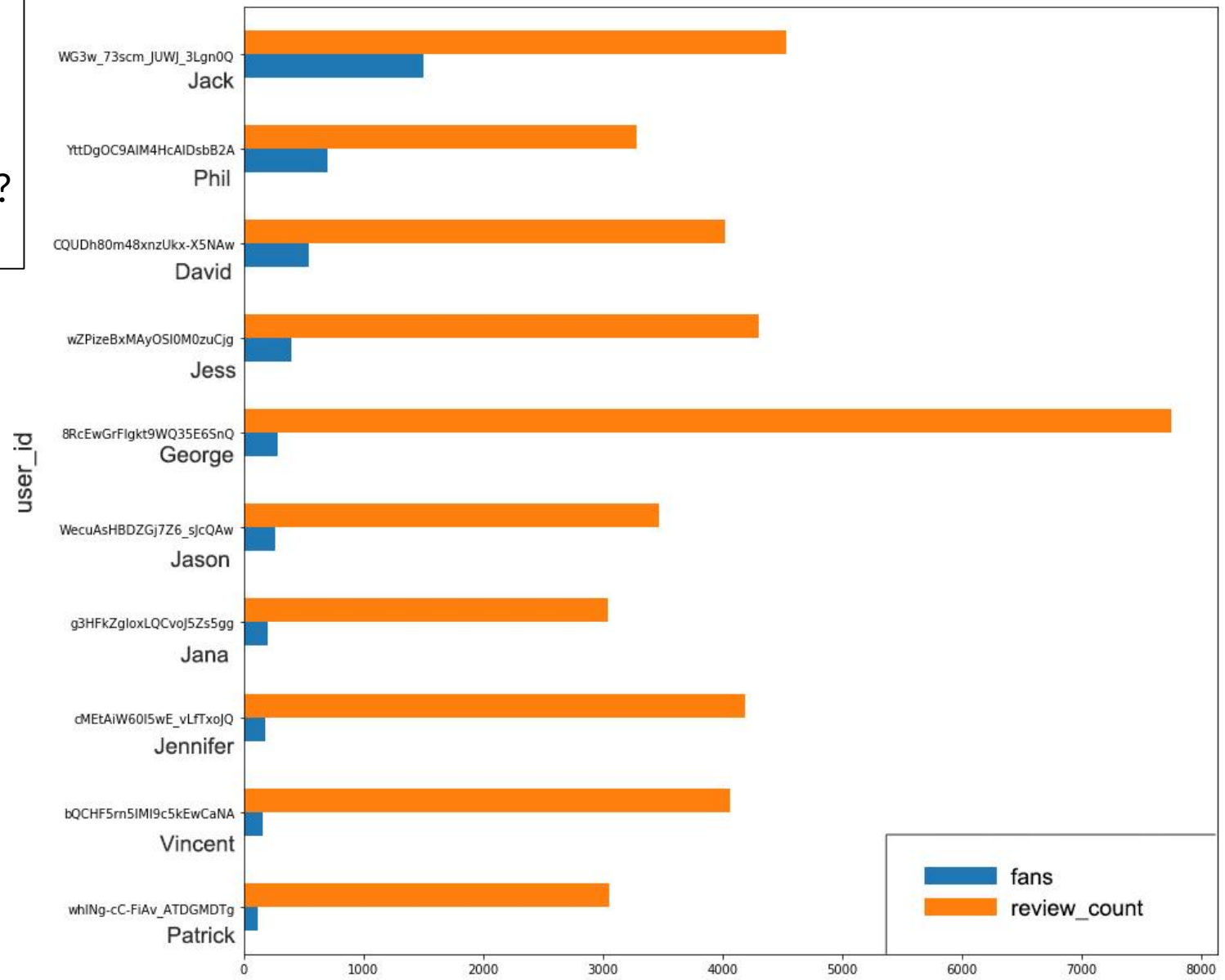
- Add User Information
- How many reviews did they wrote?
- Could active users influence more people?



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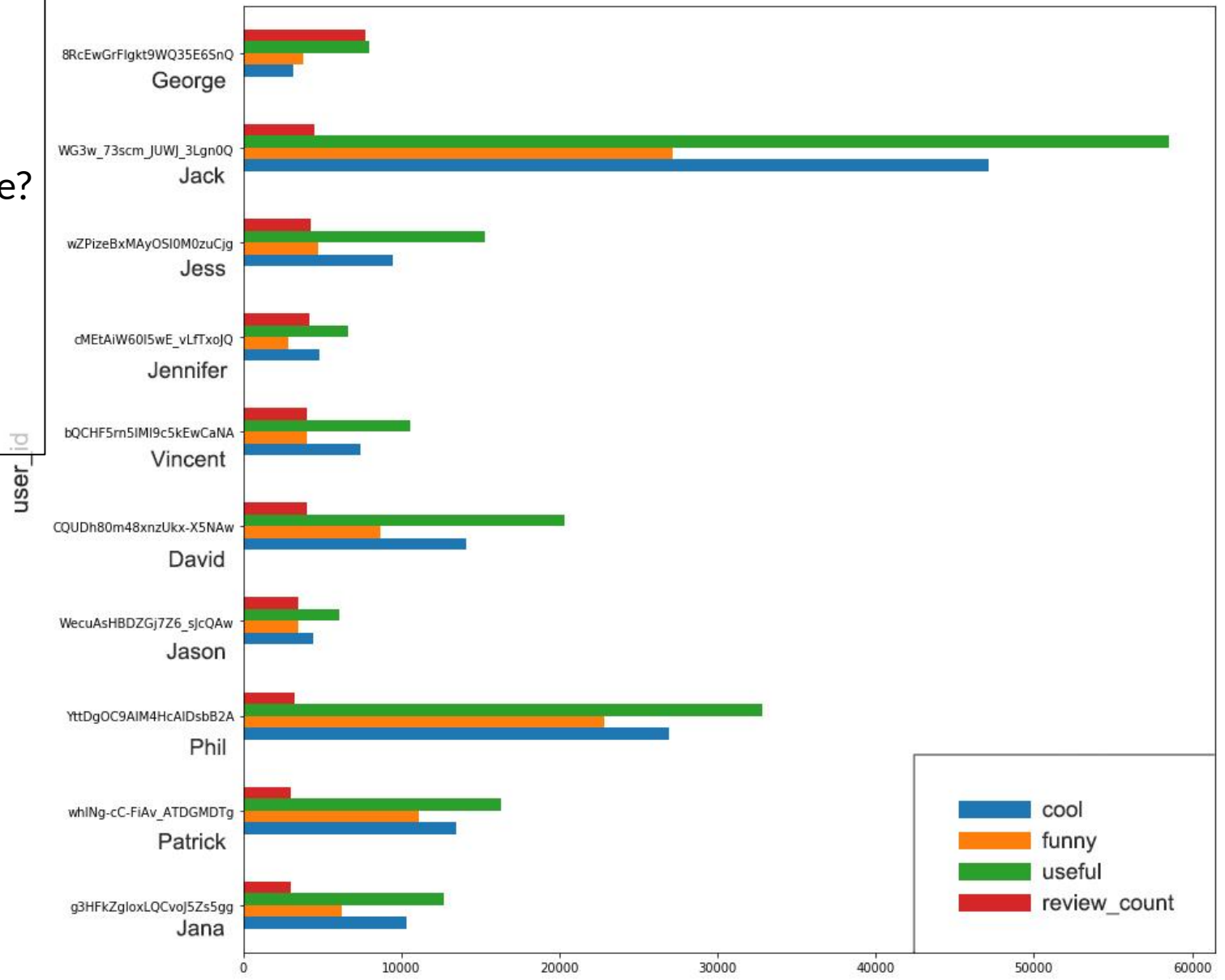
- Is he/she an active user?



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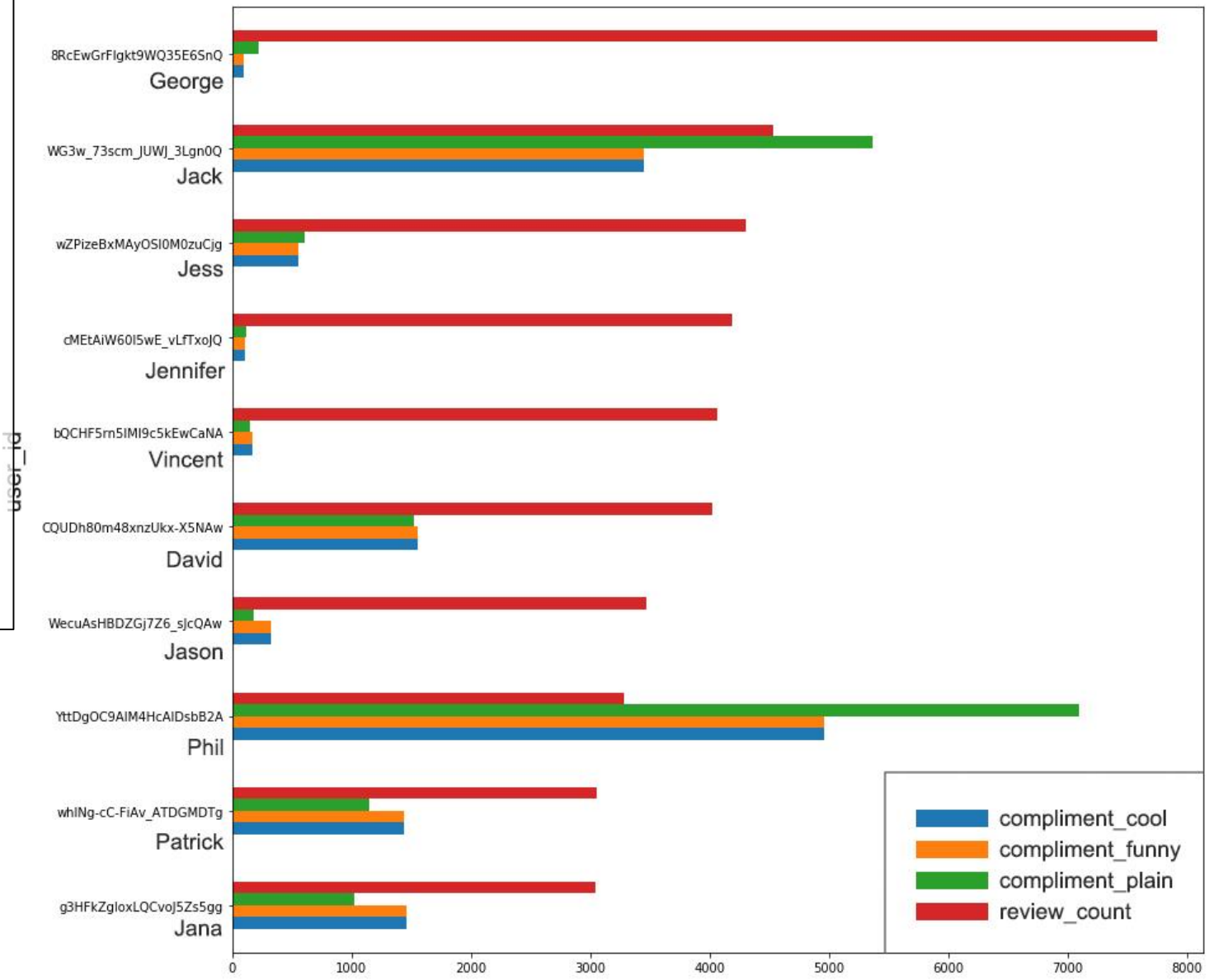

Thank you!