



# RESTAURANT ATTRIBUTES AND HOW THEY AFFECT YELP RATINGS

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# Why it's interesting?

- We can see what makes a restaurant highly rated – valuable for restaurant owners
- We can see if a rating is fair in our own perspective – valuable for guests



Find tacos, cheap dinner, Max's

Near Chicago, IL

Restaurants

Nightlife

Home Services

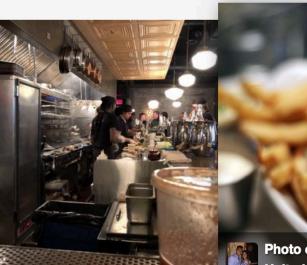
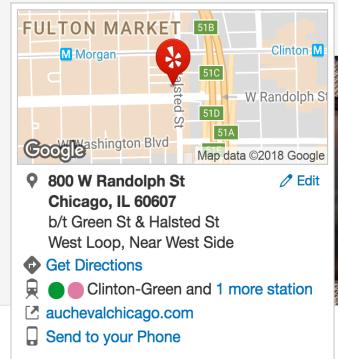
Write a Review

Even

## Au Cheval Claimed

4874 reviews [View Details](#)

\$\$ • Bars, Burgers, American (Traditional) [Edit](#)



"You have to get it "au cheval" style with a [fried egg](#) and bacon (which was more like pork belly)." in 592 reviews

[\\$2 Fried Egg](#)



**Michelle E.**

Chicago, IL

3 friends

11 reviews

20 photos

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3/31/2018

I have heard about the legend of these burgers for years. Finally pulled the trigger and went for lunch. The line was no joke. I had heard about the wait, but was hoping that maybe today it would be shorter; it was a 1 hr and 15 minute wait. However you can see your spot in line and wait via an app or you would like.

The waitstaff was quick to take our order. Everything arrived quickly. I got the single cheeseburger with egg and bacon along with the friends with Mornay and aioli sauces to split with my mothers. It was plenty of food and the cheeseburger was stacked high with the bacon and the egg. This is definitely a napkin meal as I had on to my cheeseburger to prevent the toppings from sliding out.

All the items I ordered were super good. The fries with the aioli were great. The Mornay sauce I could have done without. The pickles on the cheeseburger, and the side pickle, were all very good. Loved how the red onions on it were chopped super fine- just enough to add flavor with the fear of biting into a huge chunk.

If I am ever just craving the cheeseburger and fries, may try one of the Small Cheval restaurants. But I would miss the aioli...



# Contribution

- Add evidence to business researches
- Provide guidance on how to improve Yelp rating for restaurants, and then revenue (Luca, 2016)

# Literature Review

- Luca, M. (2016). Reviews, reputation, and revenue: The case of Yelp.com
- Byers, J. W., Mitzenmacher, M., & Zervas, G. (2012, June). The groupon effect on yelp ratings: a root cause analysis. In *Proceedings of the 13th ACM conference on electronic commerce* (pp. 248-265). ACM.

# Data

- Web scraping from Yelp html.

## Au Cheval Claimed

4873 reviews [Details](#)

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Map data ©2018 Google

📍 800 W Randolph St  
Chicago, IL 60607 [Edit](#)

b/t Green St & Halsted St  
West Loop, Near West Side

[Get Directions](#)

Clinton-Green and 1 more station

[auchevalchicago.com](http://auchevalchicago.com)

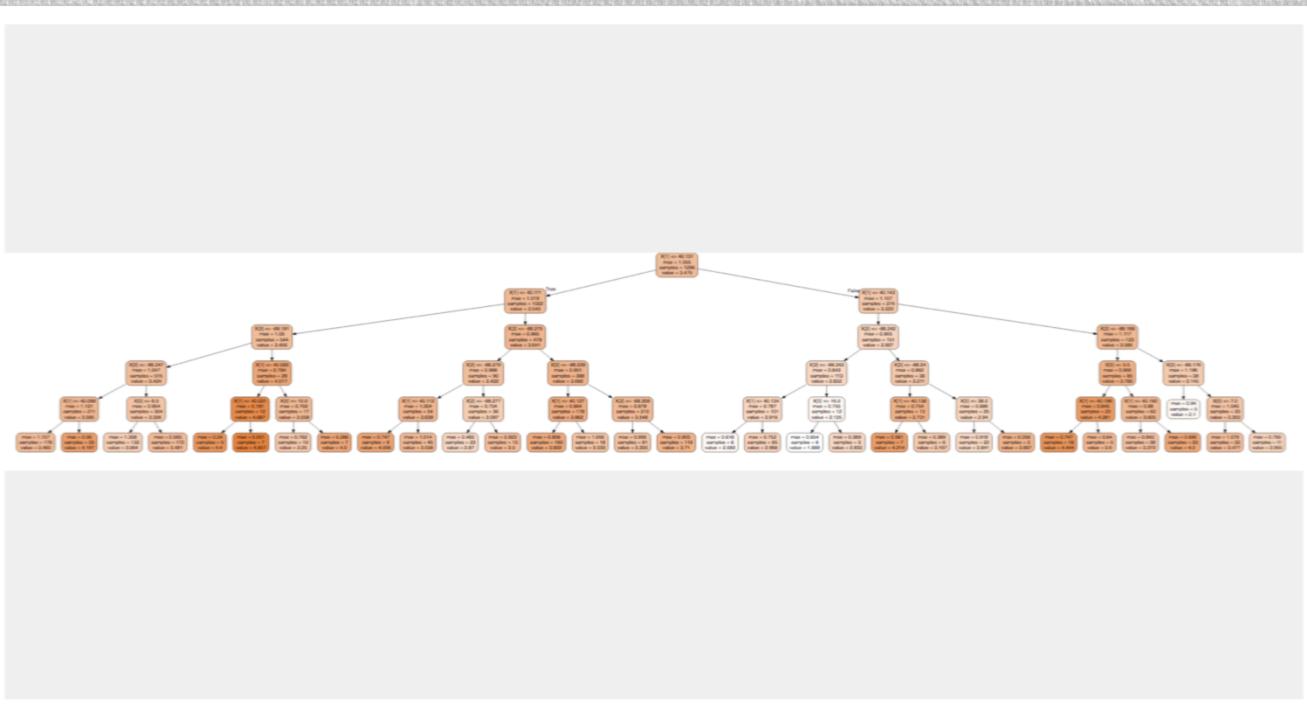
[Send to your Phone](#)

## More business info

Takes Reservations **No**  
Delivery **No**  
Take-out **No**  
Accepts Credit Cards **Yes**  
Accepts Apple Pay **No**  
Accepts Android Pay **No**  
Good For **Dinner**  
Parking **Valet, Street**  
Bike Parking **Yes**  
Good for Kids **No**  
Good for Groups **No**  
Attire **Casual**  
Ambience **Trendy**  
Noise Level **Loud**  
Music **Background**  
Good For Dancing **No**  
Alcohol **Full Bar**  
Best Nights **Mon, Tue, Wed**  
Outdoor Seating **No**  
Wi-Fi **No**  
Has TV **No**  
Drive-Thru **No**  
Caters **No**  
Has Pool Table **No**  
Gender Neutral Restrooms **Yes**

# Data Plot (all businesses in IL as an example. Data from

<https://www.kaggle.com/yelp-dataset/yelp-dataset/data>)



# Theory

Not exactly a theory in strict sense –

How do restaurant owners' behaviors affect Yelp rating?

Byers, J. W., Mitzenmacher, M., & Zervas, G. (2012, June). The groupon effect on yelp ratings: a root cause analysis. In *Proceedings of the 13th ACM conference on electronic commerce* (pp. 248-265). ACM.

# Model and Tentative results

- Model:
  - Decision tree
  - Linear regression
  - X: attributes of a restaurant (price level, parking, accept Apple Pay, etc.) y: Yelp rating of a restaurant
- Tentative results:
  - Restaurants that offer parking, with higher price level, offer alcohol, etc. may have higher Yelp ratings.

# Computational tools

- Computational methods: Mainly Python
  - Linear Regression
  - Tree-based methods
  - Web scraping

Thank you!