5-star Reviews

A 5 Step Program for Small Business Success
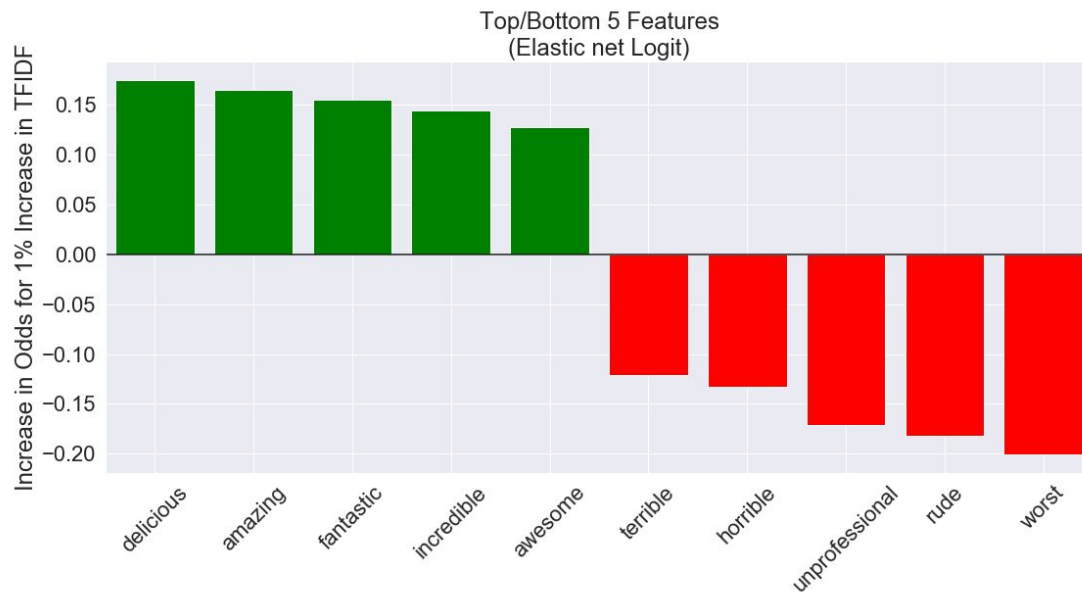
Kin-Yip

Motivation

- 82% of consumers read online reviews for local businesses.[1]
- 76% of consumers trust online reviews as much as recommendations from family and friends.[1]
- A one-star increase in yelp rating leads to a 5-9% increase in revenue.[2]

Step 1: What Makes a 5-star Review?

Words that separate 5-star and 1-star reviews.

Top/Bottom 5 Features
(Elastic net Logit)

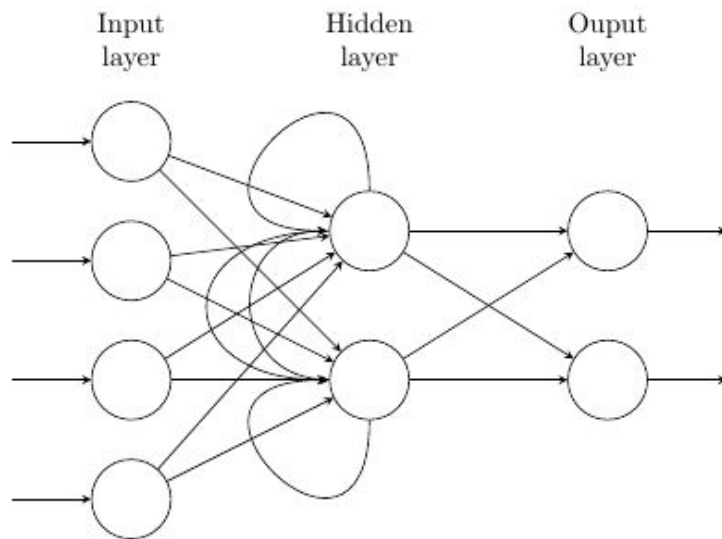# Step 2: Get 5-star Reviews

Option 1: Be amazing.

Option 2: Buy reviews. ($20-27 per review)

Option 3: Create your own.

```
Layer (type)                Output Shape
=================================================
embedding_3 (Embedding)     (64, None, 256)

gru_3 (GRU)                 (64, None, 1024)

dense_3 (Dense)             (64, None, 145)
```

Step 3: Evaluate Reviews

Model	Token	Accuracy
LightGBM	char	0.770
LightGBM	word	0.844
Swivel NN	word	0.997

Distribution of Character Counts

Feature Importances
(Gradient Boosted Classifier)
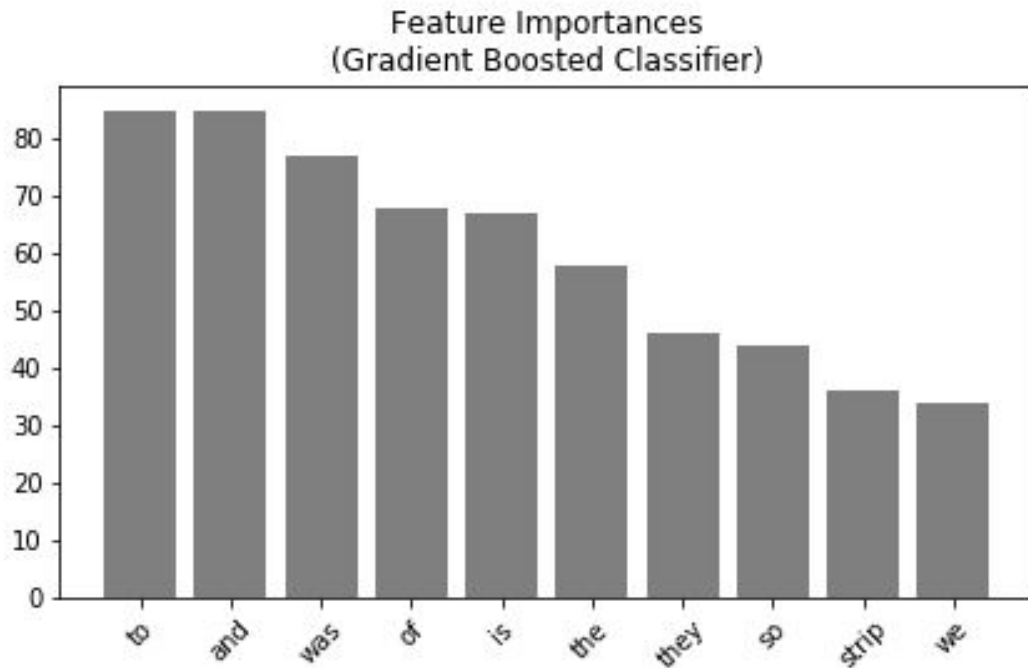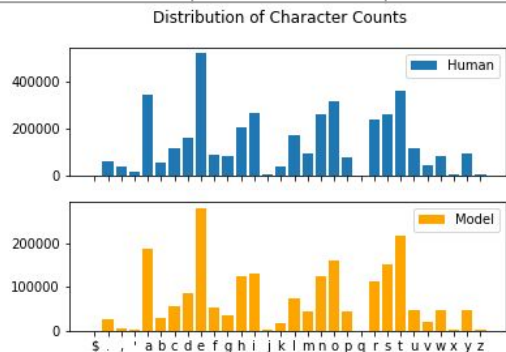
Step 4: Repeat Steps 2-3 As Needed

Train on GPUs with more cores (mine has 384 cores):

Google Colaboratory:

    NVIDIA TESLA K80 (12 hrs/session) -- 2496 cores, 12 GB VRAM

Kaggle:

    NVIDIA TESLA P100 (30 hrs/week) -- 3584 cores, 12-16 GB VRAM

AWS:

    NVIDIA TESLA P100 (4-8 gpus) -- $12-24/hr

Step 5: Deploy

Seed: "The Americano at Chul's was amazing"

"The Americano at Chul's was amazing!
I of course I would say that it is a half mix and got a free meal and helpful. The waitress was a giant chocolate and salmon menu. They are fantastic and friendly and helpful. The musical was the perfect temperature to what you pay for it. You can advertise in the past trying to get a drink."

References

1. Murphy, Rosie. "Local Consumer Review Survey: Online Reviews Statistics & Trends." *BrightLocal*, 28 Jan. 2020, www.brightlocal.com/research/local-consumer-review-survey/.
2. Luca, Michael. "Reviews, Reputation, and Revenue: The Case of Yelp.com." Harvard Business School Working Paper, No. 12-016, September 2011. (Revised March 2016. Revise and resubmit at the *American Economic Journal - Applied Economics*.)