A blue parallelogram and a light green parallelogram are positioned in the upper-left corner of the slide. The blue shape is partially behind the green one. Both shapes are oriented diagonally, with their longer sides running from the top-left towards the bottom-right.

# Are your players happy or not?

By Mac  
Project 3



# Blizzard Entertainment:

- Developer and publisher of entertainment software
- Generated \$7.5 billion in revenue in 2018
- WoW subscribers peaked at 12 million!



WoW is an online, fantasy based role playing game. For instance, one can choose to be of the dwarven race with their specific class chosen as a priest.

<https://www.blizzard.com/en-us/company/about/>  
[https://www.pcworld.com/article/207358/world\\_of\\_warcraft\\_subscribers\\_hit\\_12\\_million.html](https://www.pcworld.com/article/207358/world_of_warcraft_subscribers_hit_12_million.html)



# Issues and goals:

## Issue:

- Subscriber count instability (drop)

## Goal:

- Natural language processing on a popular subreddit dedicated to WoW to improve subscriber count. We want to bring the subscriber count back up to when the game was at its prime! 12 million subscribers can be roughly \$180 million in revenue just from subscriptions!



# Methodology?

Data Sources: /r/Happy and /r/Angry

Evaluation metric: Sensitivity

- By identifying happy and angry players, we can take advantage of what the community likes and dislikes and provide a game truly made for gamers



# KNN

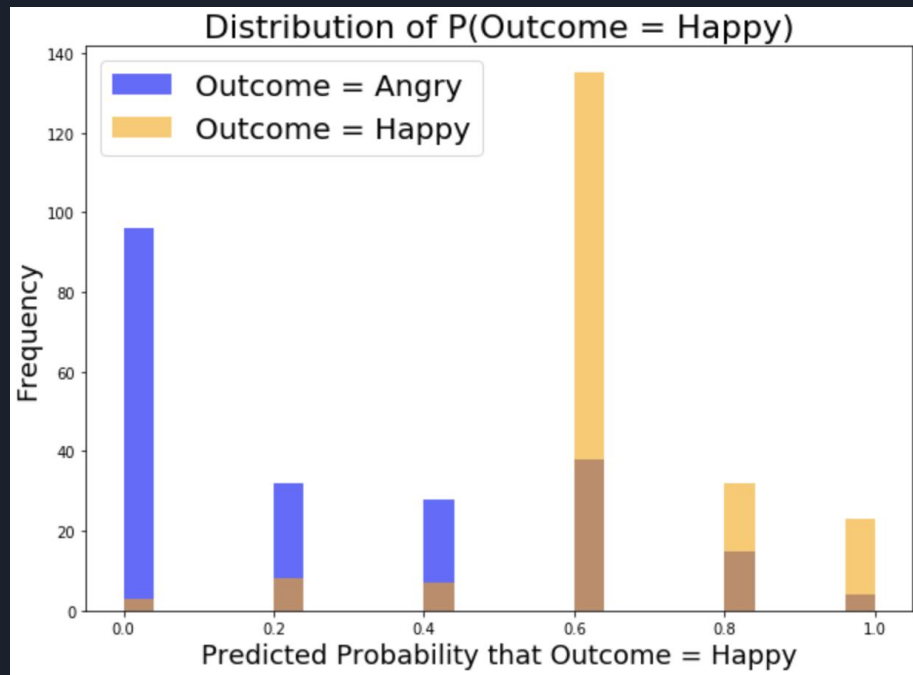
Nearest 5 neighbors

Top 1000 words

Ignore terms under 100

Ignore terms over 40% frequency

Single words, no pairs



	Predicted Angry	Predicted Happy
Actually Angry	156	57
Actually Happy	18	190

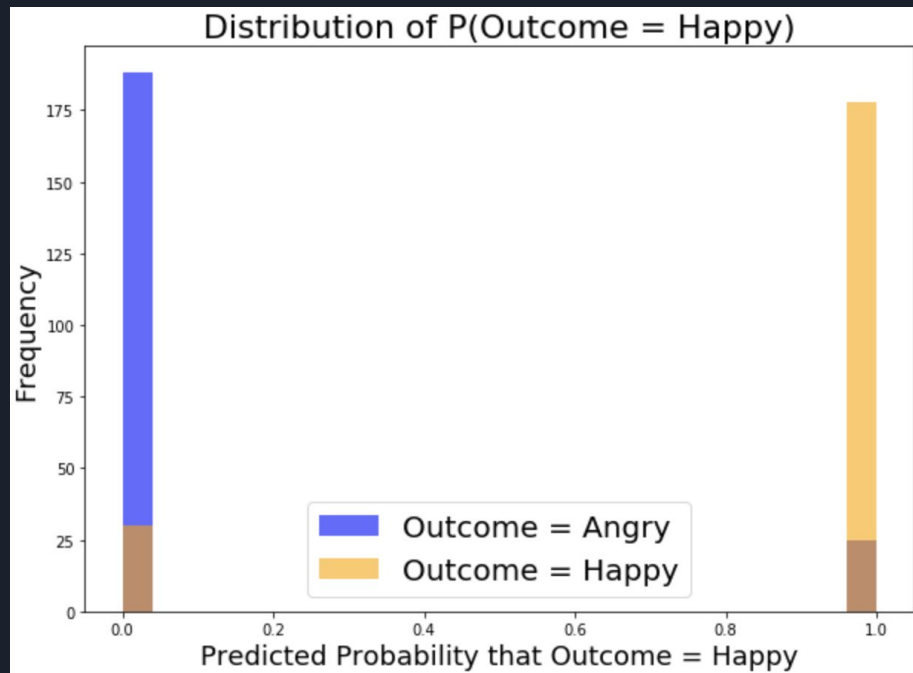
# Naive Bayes

Ignore all terms over 60% frequency

Top 1300 words

Ignore terms under frequency of 2

Includes consecutive words of size 2



	Predicted Angry	Predicted Happy
Actually Angry	188	25
Actually Happy	30	178

# Random Forest

Tree depth of 20

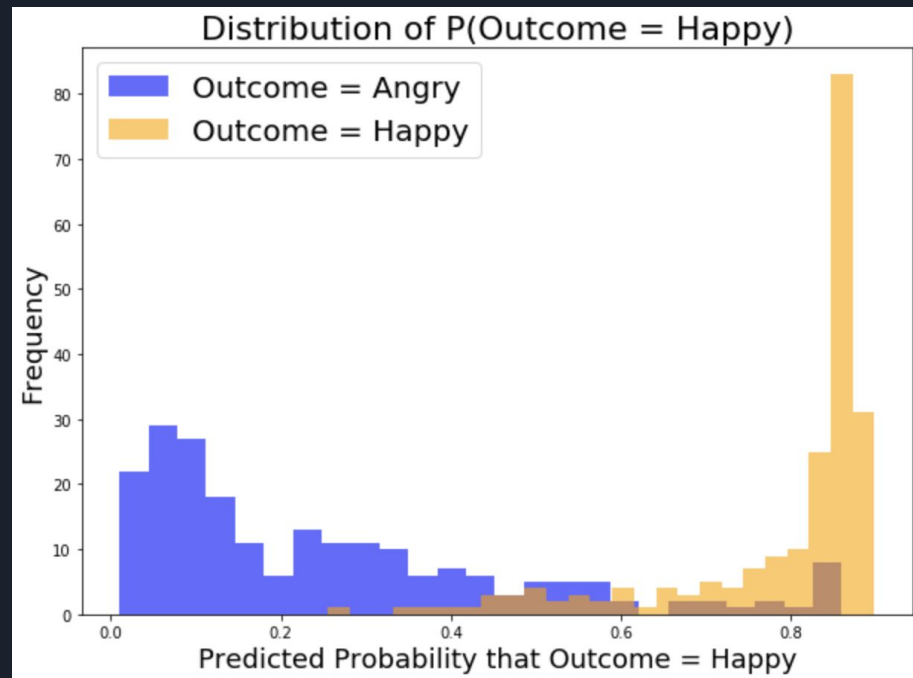
100 trees

Top 28 terms

Ignore all features over 85% frequency

Ignore terms under frequency of 3

Single words



	Predicted Angry	Predicted Happy
Actually Angry	177	36
Actually Happy	11	197

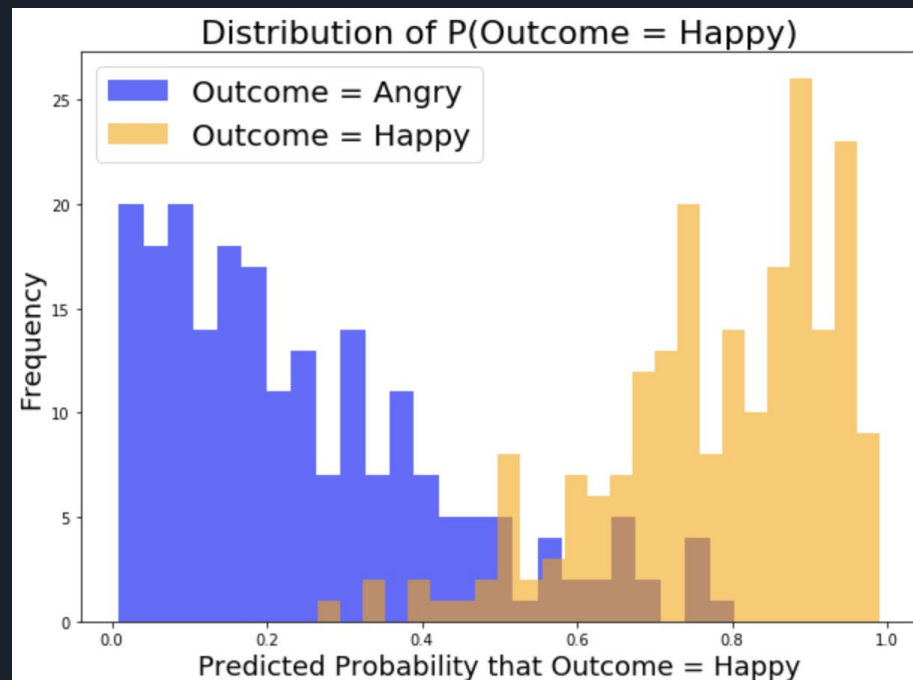
# Model (Logistic regression)

Top 1250 words

Single words, no pairs

Ignore all terms over 40% frequency

Ignore all terms under frequency of 3



	Predicted Angry	Predicted Happy
Actually Angry	191	22
Actually Happy	10	198

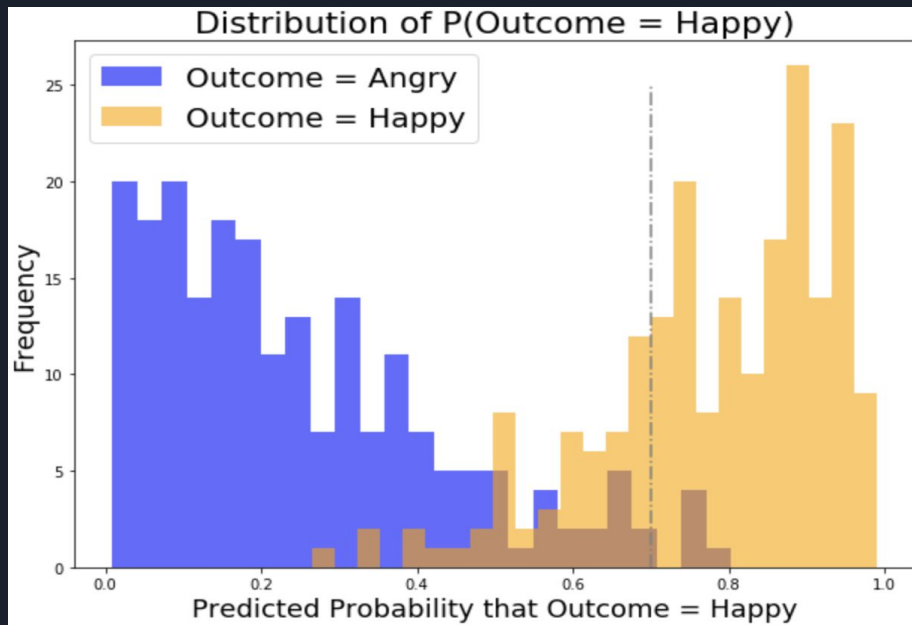


# Logistic Regression Cont'd

Moving our prediction line to 0.7

Our accuracy at predicting angry: 97.6%

Notable angry words	Notable happy words
f**king	congratulations
f**k	happy
angry	congrats
just	thank
hate	proud



	Predicted Angry	Predicted Happy
Actually Angry	208	5
Actually Happy	54	154



# Modeled WoW data findings:

- The newest update to the game is “melting” some players’ hardware
- Update the game to satisfy players’ request

"someone please tell me how the f--- balancing corruption, essences, and azerite powers is easier than just making f---ing tier sets again"

"i mean, ok, but it wouldn't have happened without the memory leak that came with 8.3. running wow shouldn't melt a \$1400 laptop."

"...stop trying to hide behind "but we want the players to experience the game on the ground" etc. no, you want to gate things to keep people subscribed for longer. stop acting like these choices are based on quality gameplay. it's fine, you're a business, i get it, but stop acting like you've been altruistic in any way since wrath."



## Conclusion:

- Improve product QA
- Host forums for all to attend

Fun fact: WoW Classic more than tripled the subscription count!

<https://www.wowhead.com/news=295273/classic-triples-wow-subscription-revenue-in-august>

<https://www.change.org/p/mike-morhaime-legacy-server-among-world-of-warcraft-community>