

PLAYER 1

HIGHSCORE 2500

PLAYER 2

UNCOVERING PLAYER SENTIMENTS: A SENTIMENT ANALYSIS ON THE FAULLOUT SERIES STEAM REVIEWS FOR BETHESDA GAME STUDIOS

START

MENU

SIGN IN

PRESENTED BY: JOCEL ARCELONA

MENU

← 01

diamond 07

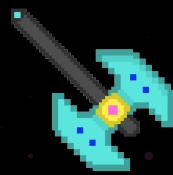
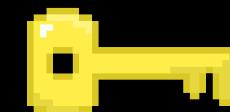
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BUSINESS PROBLEM:



BETHESDA GAME STUDIOS JUST GOT BOUGHT BY MICROSOFT AND THEY CURRENTLY HAVE A HUGE INFLUX OF BUDGET TO PRODUCE THEIR NEXT FALLOUT TITLE. HOWEVER, THEY LACK SPECIFIC UNDERSTANDING OF WHAT FACTORS ARE DRIVING POSITIVE OR NEGATIVE SENTIMENT AMONG THEIR PLAYERS.



OBJECTIVES:

- To understand the overall player sentiment towards the Fallout Series using Natural Language Processing
- To identify common themes and topics that emerge from the player reviews using Topic Modeling
- To provide insights and recommendations to Bethesda Game Studios on how to improve player experience based on player reviews
- To develop a sentiment analysis model that can accurately predict a players sentiment towards the game



BACK TO
AGENDA PAGE

SIGN IN



DATA:



- Web scraped 320,000 reviews from the steam app with 22 features
- ended up using only 192,000 reviews after dropping non-english reviews

BACK TO AGENDA PAGE

MENU



♦ WHAT IS STEAM?

Steam is a digital platform created by Valve Corporation to serve as a distributor of PC games



♦ WHAT IS THE FALLOUT SERIES ABOUT?

The Fallout Game Series is a post-apocalyptic action role-playing game set in a retro-futuristic world.



♦ WHAT IS BETHESDA GAME STUDIOS?

Bethesda Game Studios is known for its work on the Fallout and Elder Scrolls series. These games are large, open world RPG games

[BACK TO AGENDA PAGE](#)



PREPROCESSING STEPS:

- ❖ LOWERCASE TEXTUAL DATA, REMOVE STOP WORDS, REMOVE NON-ENGLISH WORDS, TOKENIZE AND LEMMATIZE
- ❖ USED GENSIM'S LDA TOPIC MODELING FOR EDA TO IDENTIFY DOMINANT TOPICS FOR POSITIVE AND NEGATIVE REVIEWS
- ❖ USED WORDCLOUD FOR VISUALIZATION

[BACK TO AGENDA PAGE](#)

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best story
best_ever
mod play
amazing made
love hour great

nice playlot
pretty give launch
friend great
story best

WORD
CLOUD
OF DOMINANT
TOPICS FROM
POSITIVE
REVIEWS

topic_2
price_free
worth_price
coffee_short long_enough
hour average
graphic_forget
story
bug learn_hard

bussin gamer
marry piper heat
piper_piper poggy
world_fire pretty_decent nice_nice

[BACK TO AGENDA PAGE](#)

01 07 12



glitchy_glitchy
overencumbered_entire
keep_crashing
glitchy_glotchy great
play bug
suck german
server_disconnected

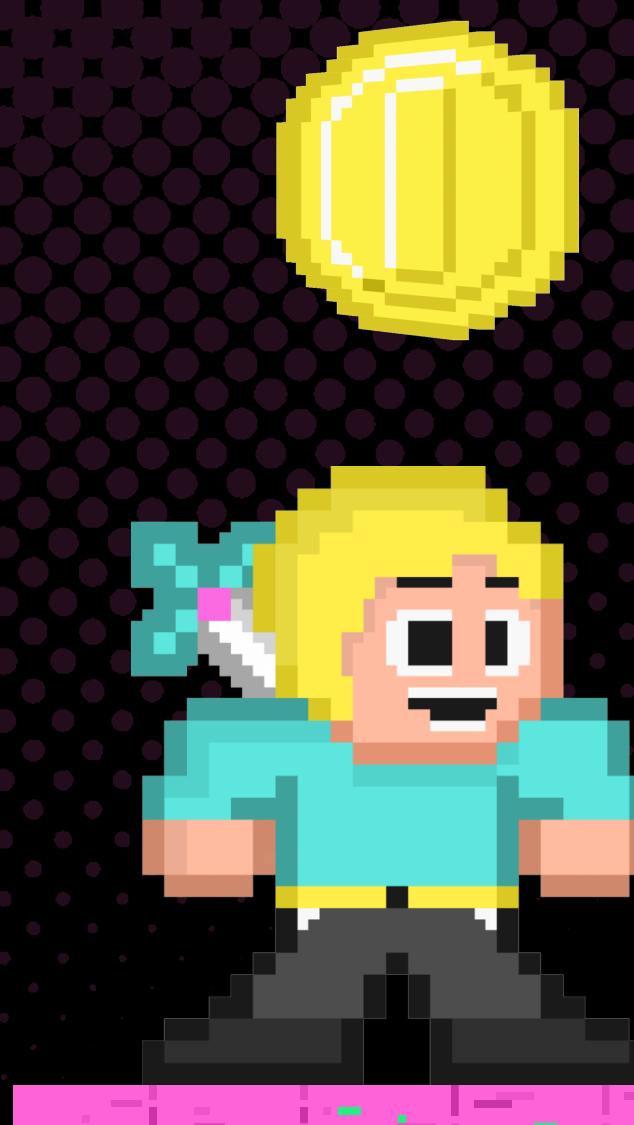
window version crash
start launch
work
play steam
vega great

WORD
CLOUD OF
DOMINANT
TOPICS
FROM NEGATIVE
REVIEWS

barely_click
microtransactions
get_boring went
play money
chinesetodd
dweller playing

crash people player
glitchy_glitchy
story
bug year
glitchy_glotchy
issue

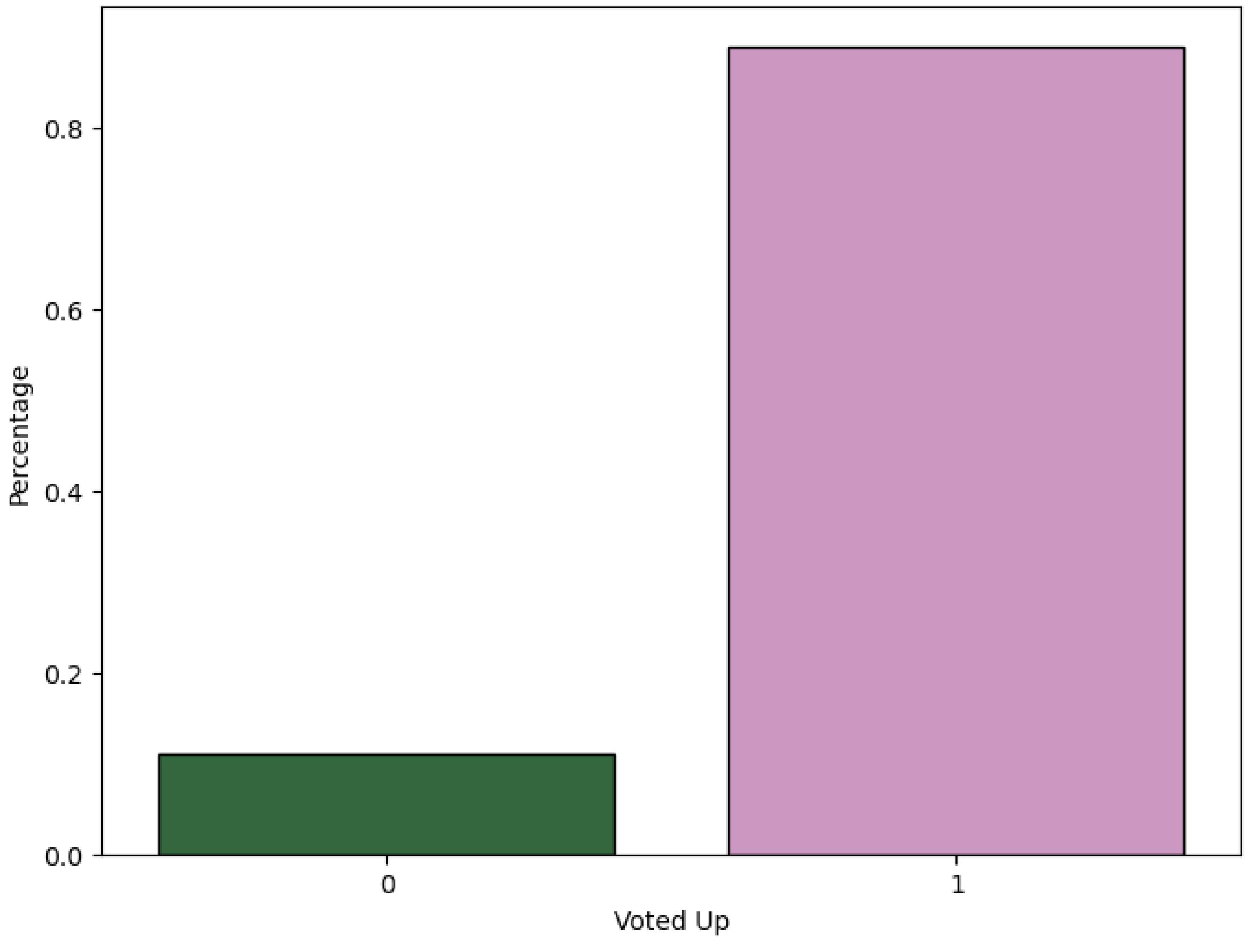
PLAYER 1



CLASS 0: 11%

CLASS 1: 89%

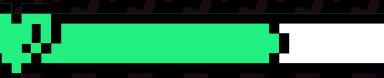
Distribution of Voted Up





★★★★★

HIGHSCORE 2500



PLAYER 2

MODELS



MULTINOMIAL
NAIVE BAYES



DECISION TREES



RANDOM FOREST



XGBOOST

NLTK (UNIGRAMS)

ACCURACY: 0.77

ACCURACY: 0.89

ACCURACY: 0.87

ACCURACY: 0.93

GENSIM (BIGRAMS)

ACCURACY: 0.77

ACCURACY: 0.89

ACCURACY: 0.86

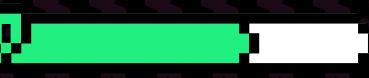
ACCURACY: 0.92





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HIGHSCORE 2500



PLAYER 2

BEST MODEL

STACKED MULTINOMIAL
NAIVE BAYES & XGBOOST:

ACCURACY: 0.93

RECALL:

- CLASS 0: 0.70
- CLASS 1: 0.95

PRECISION:

- CLASS 0: 0.65
- CLASS 1: 0.96

F1 SCORE:

- CLASS 0: 0.67
- CLASS 1: 0.96

WHAT IS A STACKING CLASSIFIER?

A STACKING CLASSIFIER IS A TYPE OF ENSEMBLE MODEL IN MACHINE LEARNING THAT COMBINES MULTIPLE BASE CLASSIFIERS TO MAKE A FINAL PREDICTION.

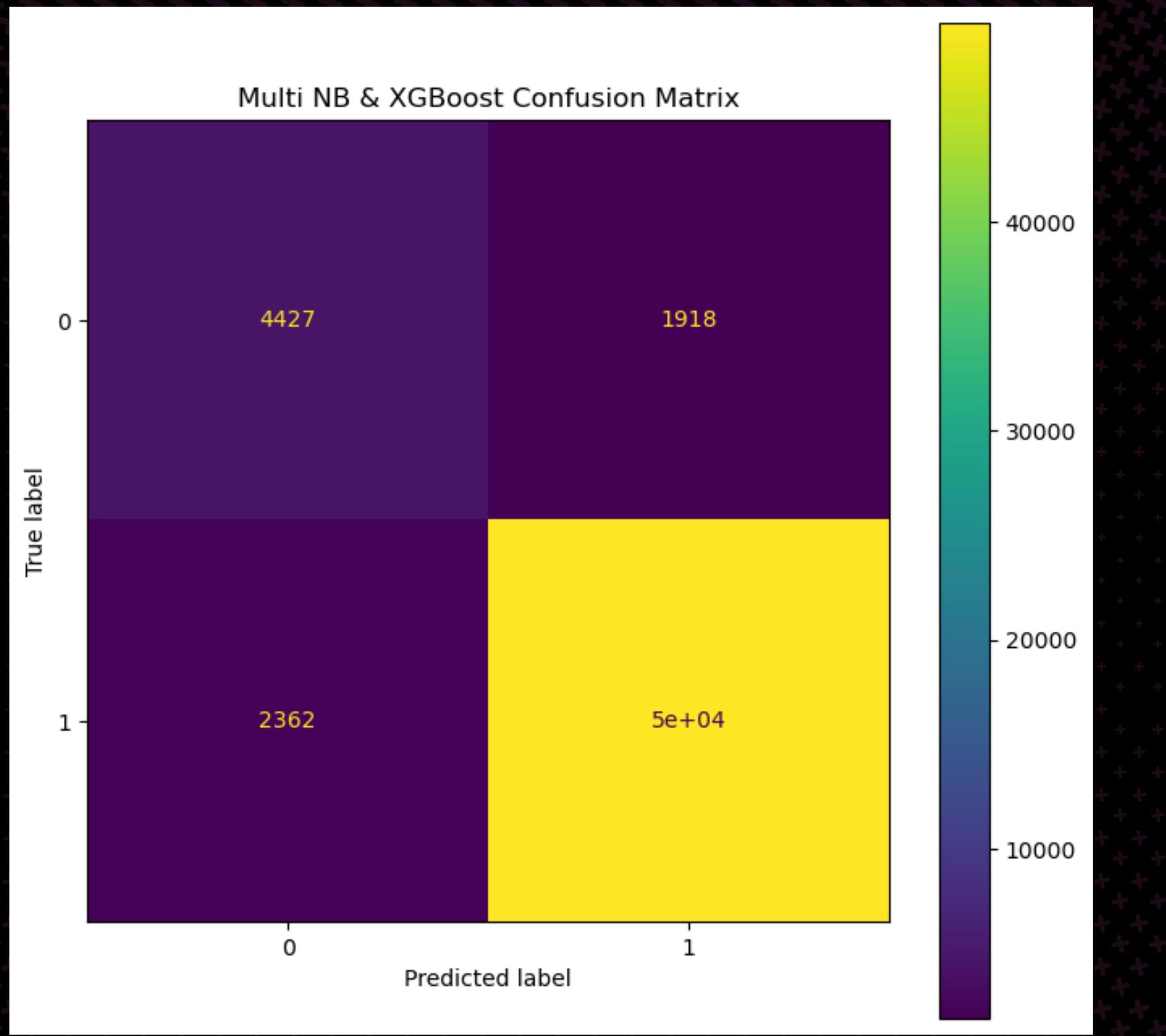


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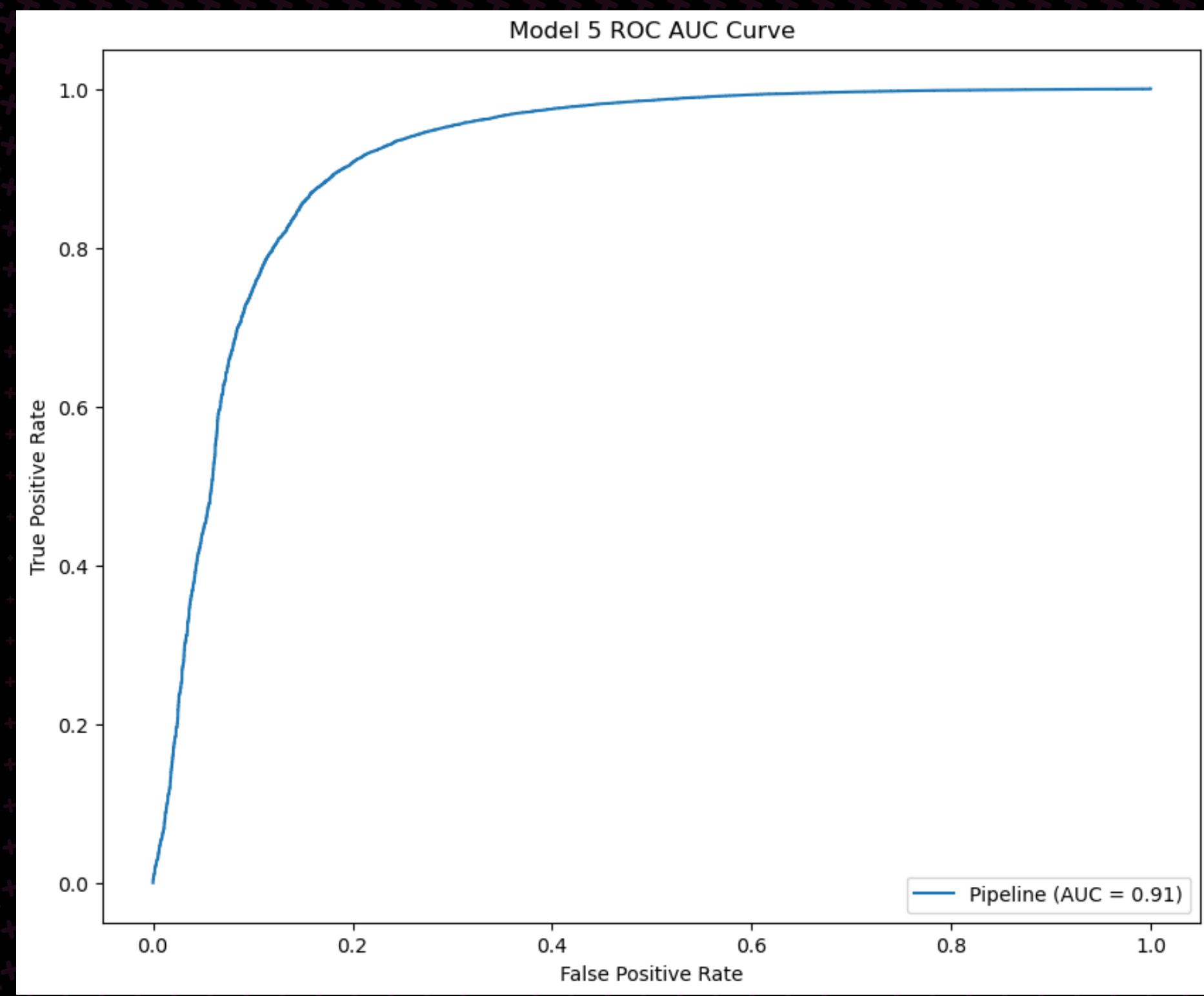


PLAYER 2

Multi NB & XGBoost Confusion Matrix



Model 5 ROC AUC Curve



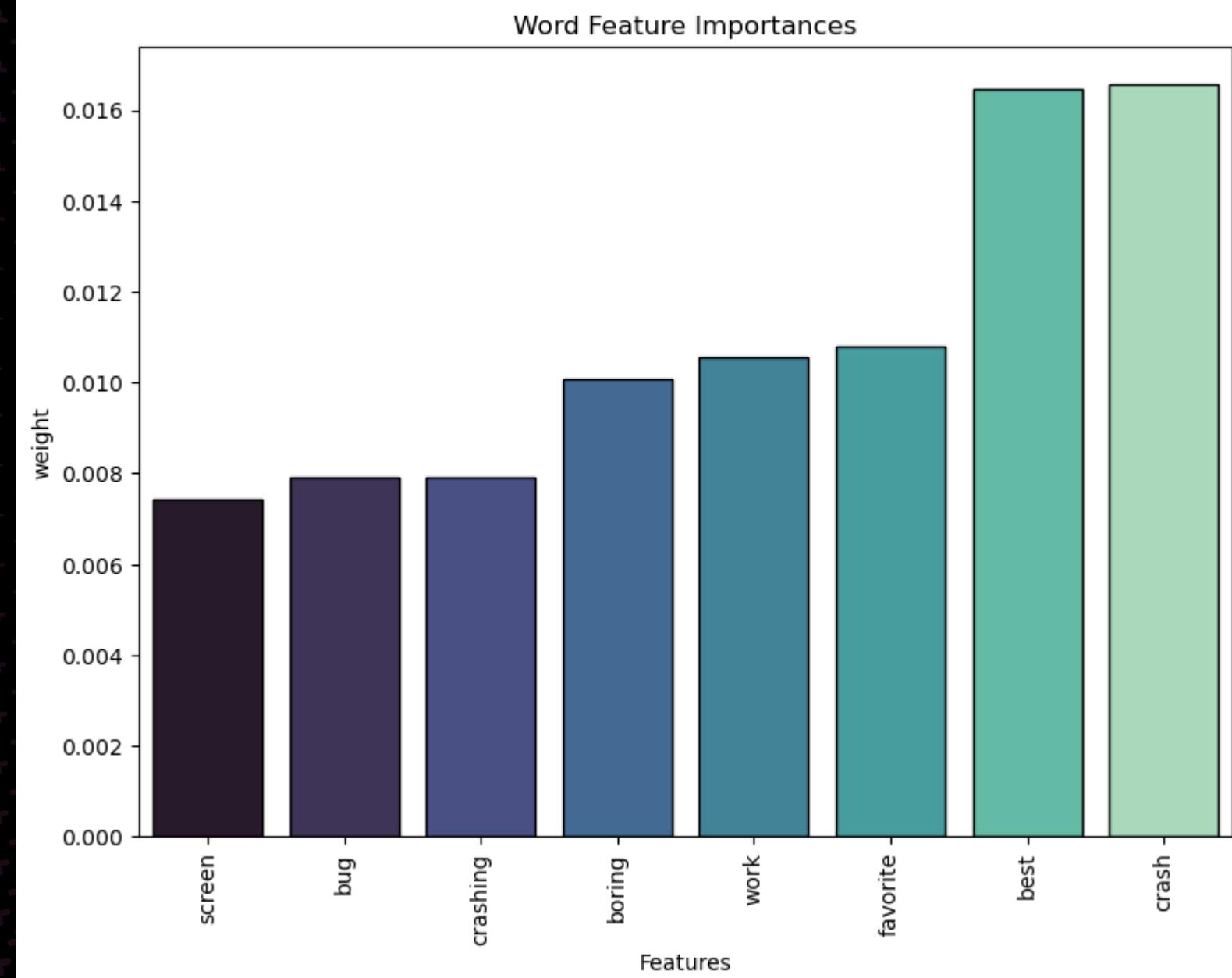
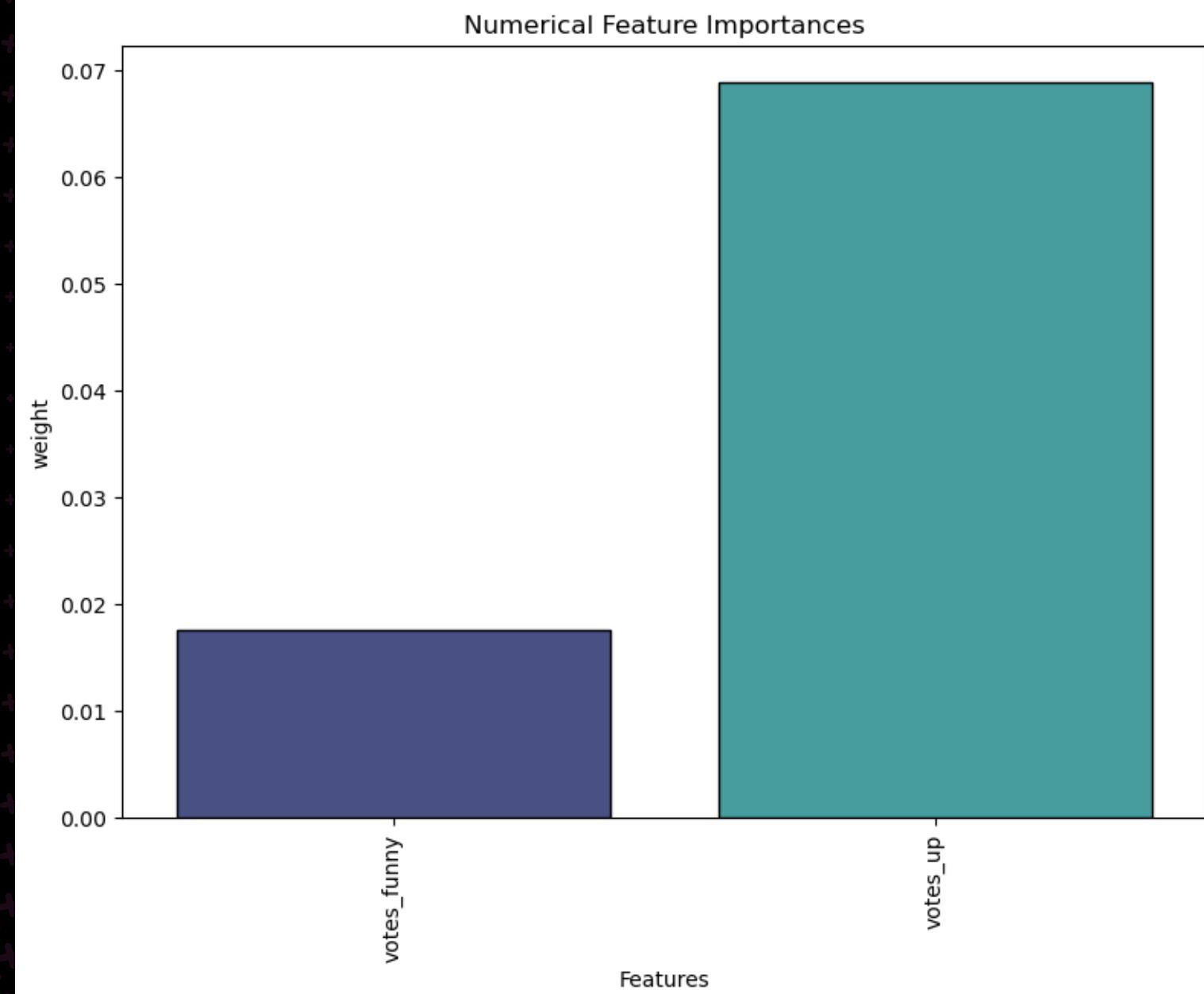


PLAYER 2

FEATURE IMPORTANCE

"VOTES UP" FEATURE
HELPS OTHER PLAYERS TO
QUICKLY IDENTIFY
REVIEWS THAT HAVE BEEN
FOUND USEFUL OR
INFORMATIVE BY OTHER
MEMBERS OF THE
COMMUNITY

"VOTES FUNNY" FEATURE
IS INTENDED TO PROVIDE
A WAY FOR PLAYERS TO
SHARE THEIR SENSE OF
HUMOR AND APPRECIATE
REVIEWS THAT ARE
WRITTEN IN A
LIGHTEARTED OR
HUMOROUS TONE.



RECOMMENDATIONS

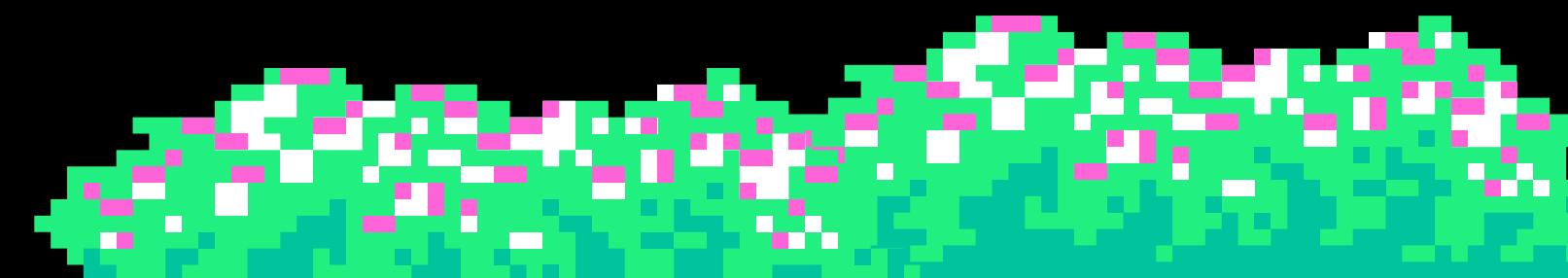
- ◆ Fix technical issues like glitches, frequent crashes and launching issues.
- ◆ Reduce number of microtransactions
- ◆ Improve the storyline

❖ FUTURE STEPS ❖

DATA COLLECTION:
GATHER MORE REVIEWS
FROM OTHER GAMING
PLATFORMS

USE PYSPARK FOR BIGGER DATA

USE A TRANSLATOR TO
TRANSLATE NON-ENGLISH
REVIEWS FOR BETTER
GENERALIZABILITY



MENU



THANK YOU!



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<https://github.com/JocelArcelona>



<https://www.linkedin.com/in/jocel-arcelona/>