



Automatic Personality Prediction

by Weston Shuken

Automatic Personality Prediction

Automated forecasting of a personality using human-generated/exchanged contents:

- text
- speech
- image
- video

Automatic Personality Prediction

Automated forecasting of a personality using human-generated/exchanged contents:

- **text**

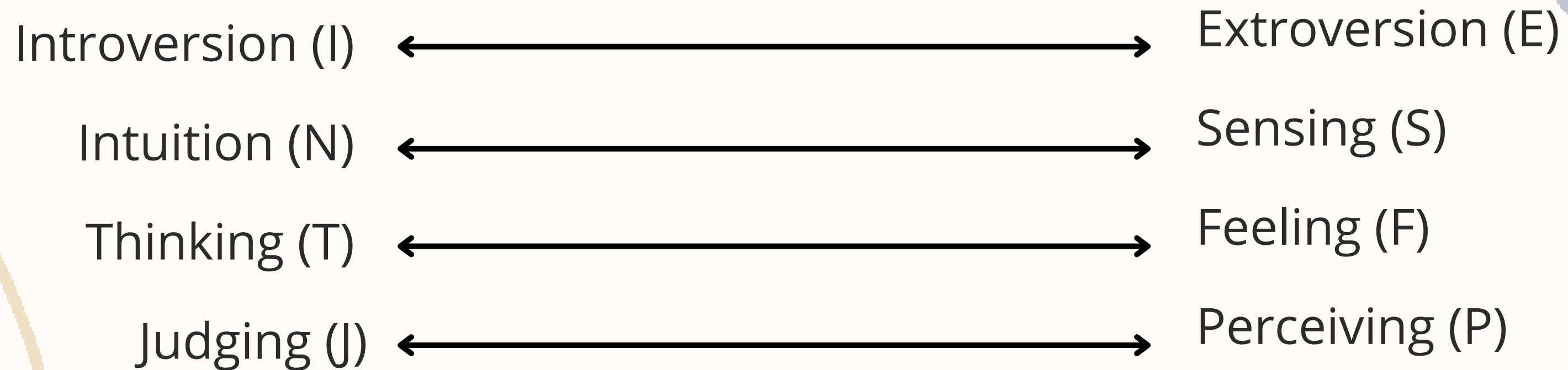
- speech

- image

- video

Myers-Briggs Type Indicator (MBTI)

8 overall traits



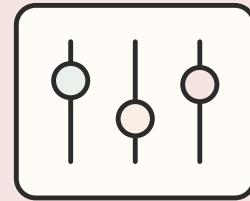
16 personality types

ISTJ	INFJ	ESTP	ENFP
ISTP	INFP	ESTJ	ENFJ
ISFJ	INTJ	ESFP	ENTP
ISFP	INTP	ESFJ	ENTJ

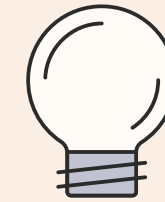
Opportunities



Validity of MBTI



Classifying Online Behavior



Speed & Quantity

Data

8600+ Users

50 Posts Per User

Tagged with MBTI type

Personality Cafe Forum Posts

Methods

Preprocessing

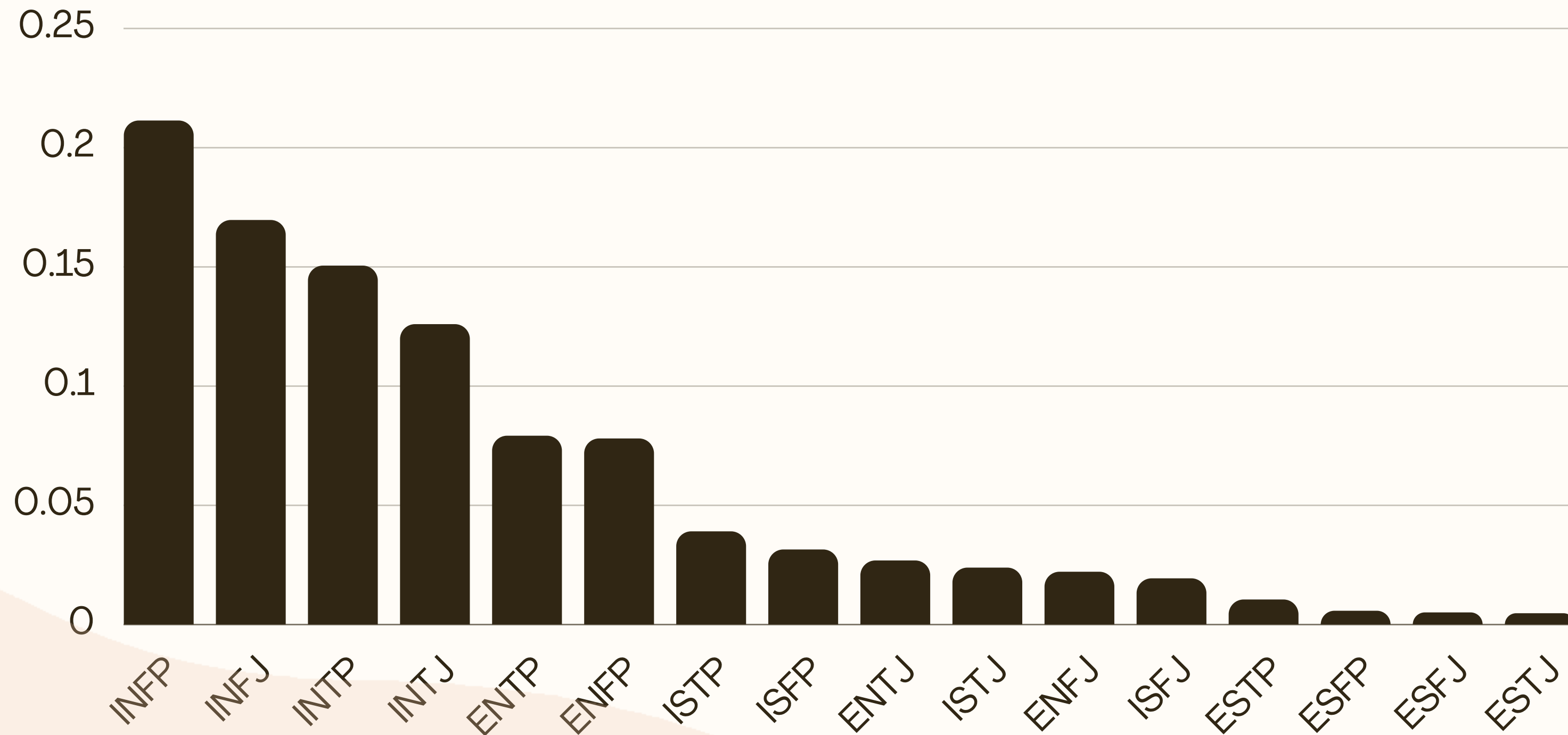
Vectorization strategies

Machine Learning Algorithms

Performance Evaluation

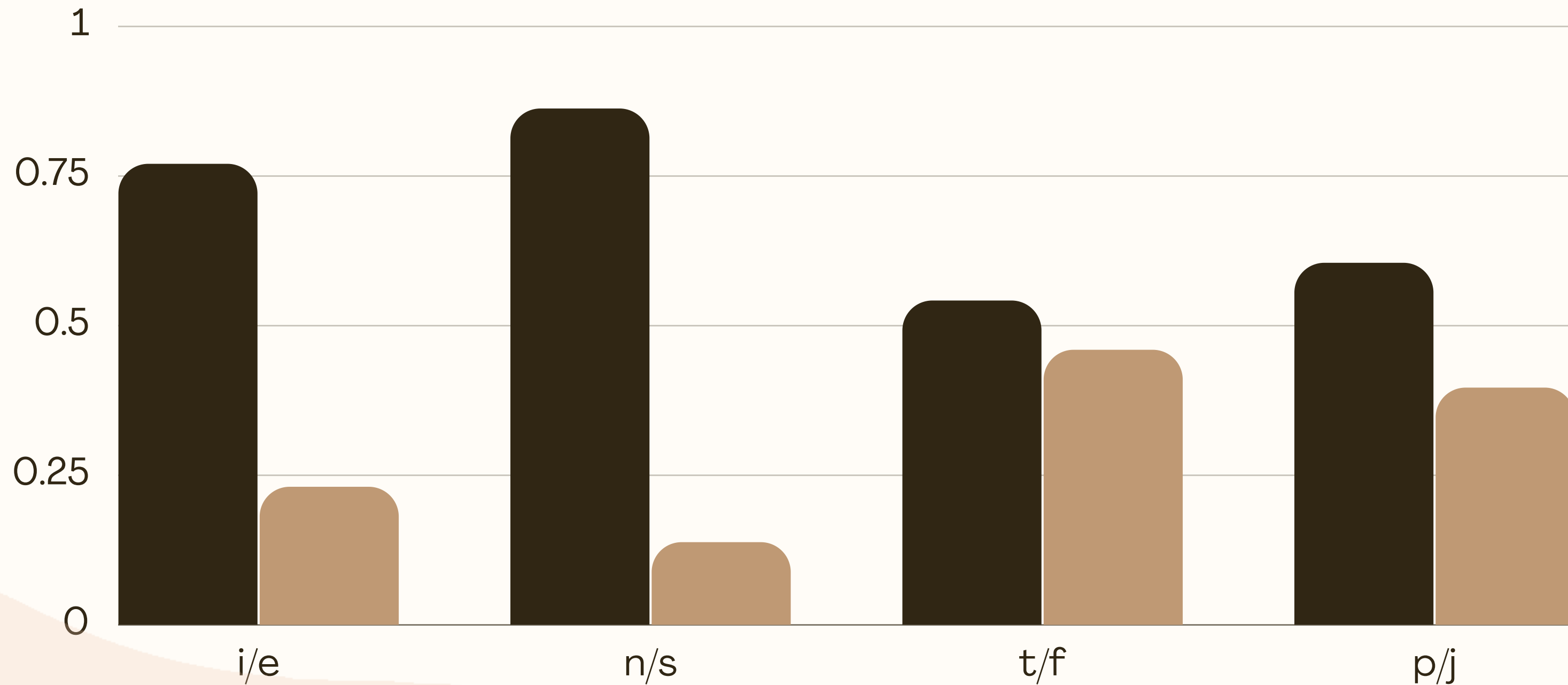
Data Understanding

Personality Cafe Class Balance



Data Understanding

Personality Cafe Binary Trait Balance



Data Cleaning & Preprocessing

Sample User Data

We seem to have alot of ENFP's in my family lol|||I know how you feel, my dad's the same way. He thinks that I'm not practical enough, and that I never get things done the way he wants them done. He is the most difficult person in the world to...|||ENTJ/ESTJ I feel are the hardest to deal with. They talk to you like you're 10 years old, even when you are the same age as them. They are bossy, mean, and narcissistic. ISFJ's have their good

Can you predict personality given this text?

seem alot family lol know feel dad way think im practical enough never get thing do way want do
difficult person world feel hard deal talk like youre year old even age bossy mean narcissistic good

Multiclass Modeling

ISTJ

ISTP

ISFJ

ISFP

INFJ

INFP

INTJ

INTP

ESTP

ESTJ

ESFP

ESFJ

ENFP

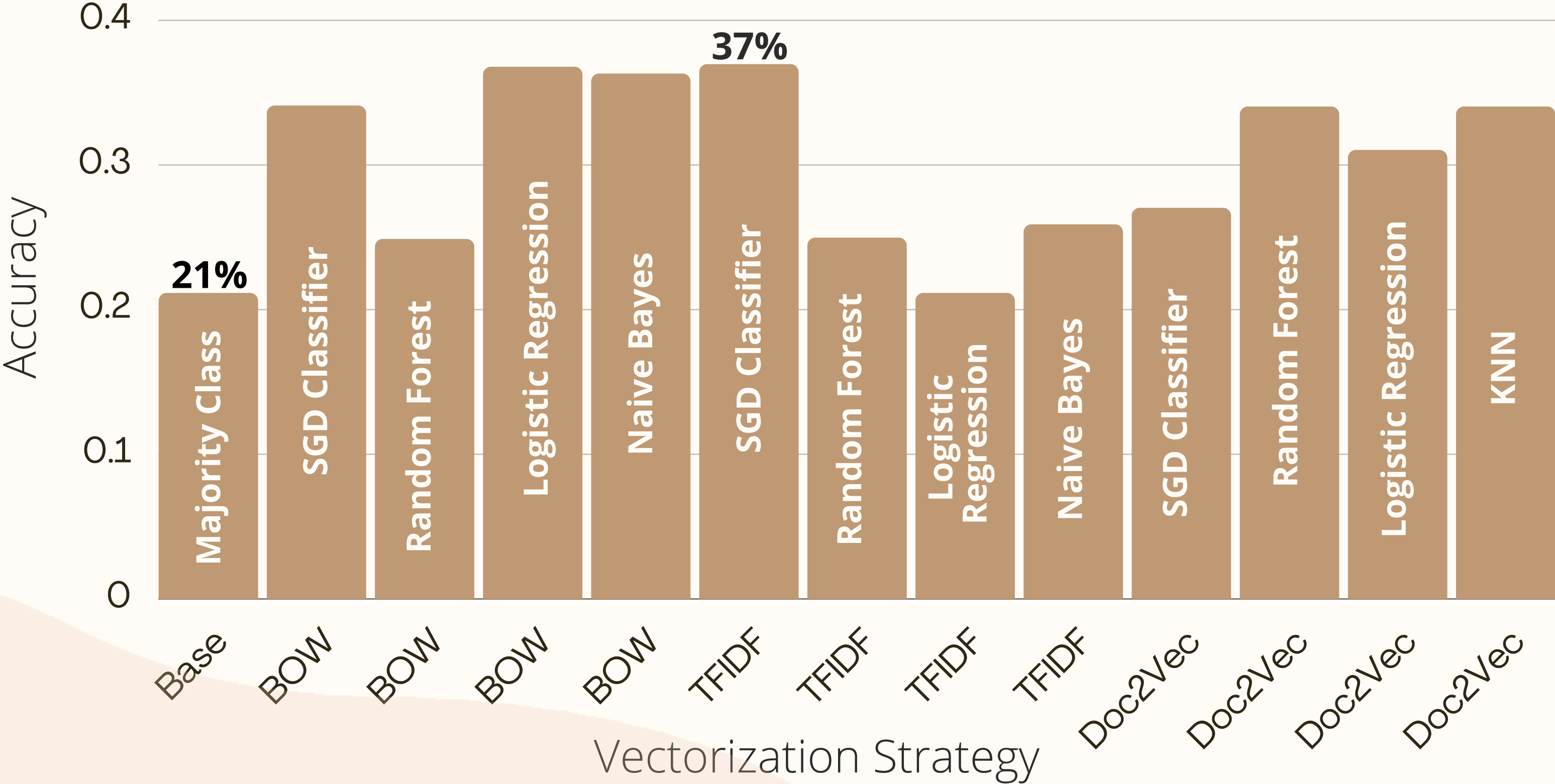
ENFJ

ENTP

ENTJ

Modeling (multiclass)

Modeling Techniques and Improvements



Binary Modeling



Introversion vs Extroversion

Sensing vs Intuition

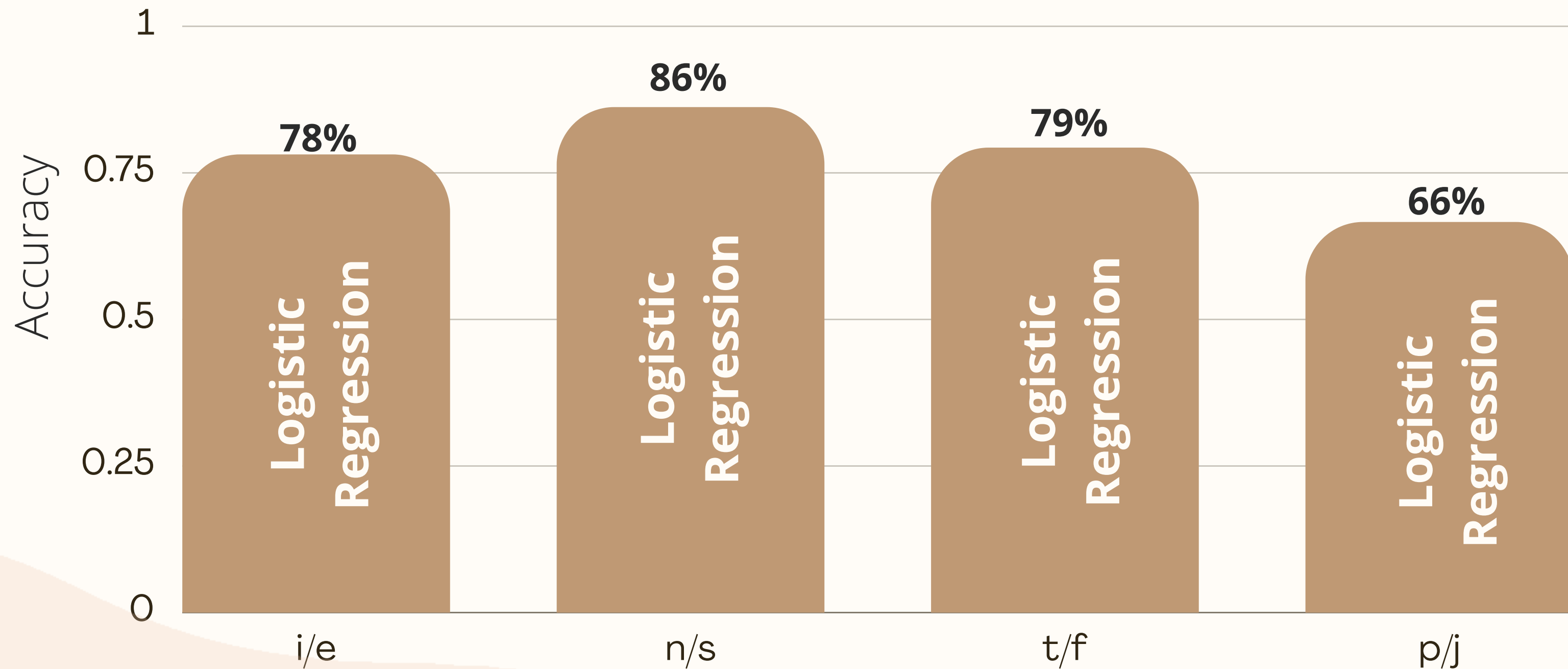
Thinking vs Feeling

Judging vs Perceiving



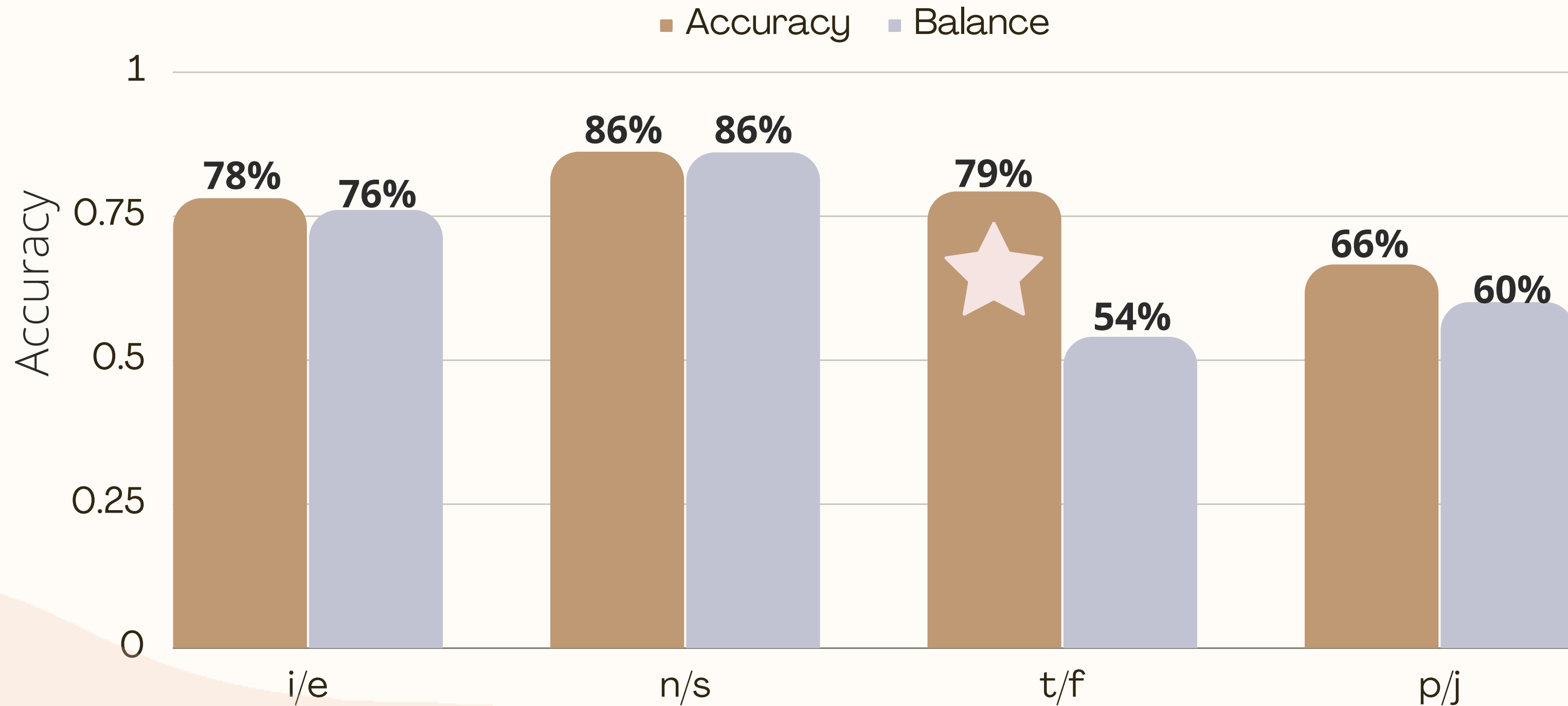
Modeling (binary)

Accuracy Scores



Modeling (binary)

Binary Accuracy Compared to Majority Class Balance



Evaluation

How is this possible?

Thinking TF-IDF

'youtube', 0.83
'type likely', 0.80
'ha', 0.80
'cool', 0.72
'rough', 0.67
'greeting', 0.65
'dear', 0.63
'genius', 0.61
'hello welcome', 0.55
'lol', 0.46

Feeling TF-IDF

'congrats', 0.82
'type likely', 0.82
'grateful', 0.75
'ugly', 0.72
'hug', 0.71
'regard', 0.71
'love love', 0.70
'inside head', 0.60
'tolerate', 0.58
'lust', 0.52

Final Model Results

Thinking vs Feeling

Model: SGD Classifier

Vectorization: TF-IDF

Accuracy: 80%

F1 Score: 80%

Evaluation

Online APP

Automatic Personality Predictor

Type or paste some text... anything

seem alot family lol know feel dad way think im practical enough never get thing do way want do
difficult person world feel hard deal talk like youre year old even age bossy mean narcissistic good

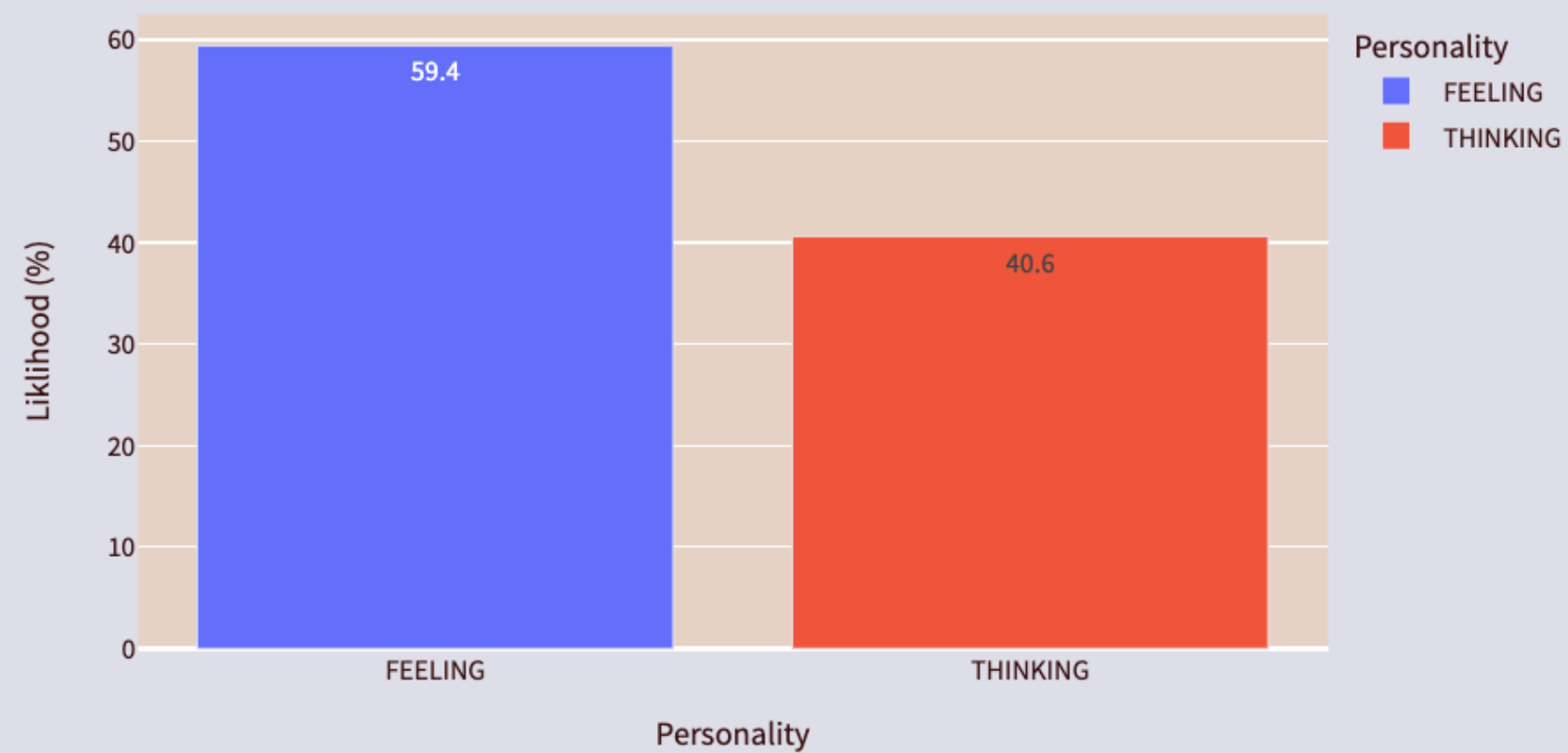
Send

Evaluation

Online APP

59.4% probabilitly this is correct

Pesonality Type Likelihood Graph



```
[  
  0 : "lol know"  
  1 : "bossy"  
  2 : "talk like"  
  3 : "way want"  
  4 : "get thing"  
]
```

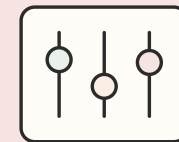
Conclusion & Next Steps



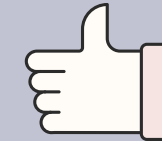
Thinking vs. Feeling



Verified MBTI



Online Segmentation



Transformers

Thank you!



Contact/Connect