

PROBLEM STATEMENT

The World Health Organization indicates that depression and anxiety, which affect 300 million people around the world, cost the global economy a vast **\$1 trillion** in lost productivity each year.

What signs should employers pay attention to?

DATA FEATURES

- Have you had a mental health disorder in the past?
- Is your primary role within your company related to tech/IT?
- Do you currently have a mental health disorder?
- Do you have a family history of mental illness?
- How many employees does your company or organization have?
- What is your age?
- What is your gender?

150+ features 2000+ participants



DATA CLEANING WITH SPARK

- Combine data from 2016-2019
- Replace null values and unreasonable answers with 'Other'
- Group the same answers together (i.e., make "female", "f" and "F", "Female")
- Dummy categorical features



FEATURE SELECTION

Feature	Feature Importance > 0.01
What is your age?	0.56
Have you had a mental health disorder in the past? (Yes)	0.50
Have you had a mental health disorder in the past? (Maybe)	0.02
Has being identified as a person with a mental health issue affected your career? (Yes, I think it would)	0.01
Would you be willing to bring up a physical health issue with a potential employer in an interview? (Yes)	0.01

MODELING

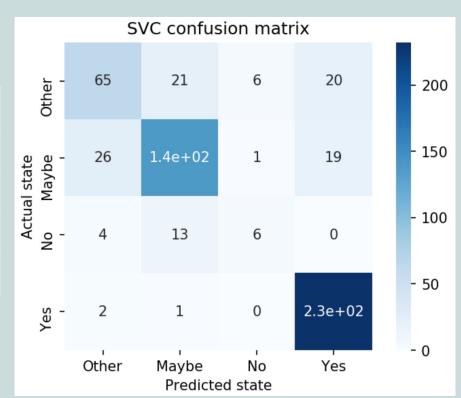
ModelXGBoostSVCAdaBoostRandomForestLGBM



XGBoost	SVC	LGBM
0.75	0.76	0.75
0.79	0.79	0.79
	0.75	0.75 0.76

RESULTS (SVC)

Class	Recall
Other	58%
Maybe	75%
No	26%
Yes	98%



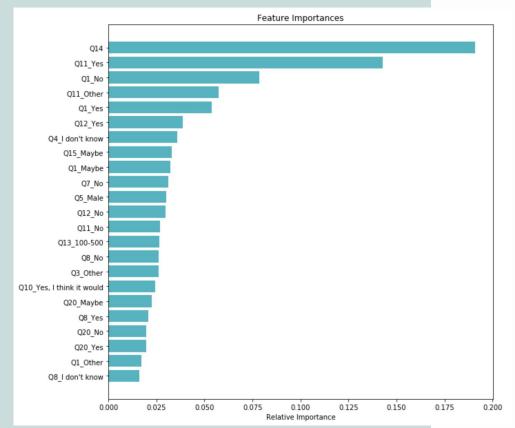
FEATURE IMPORTANCE

VERY important:

- Q14 What is your age?
- Q11 Have you ever been diagnosed with a mental health disorder? (Yes)

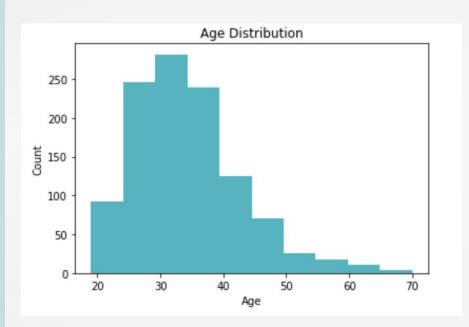
NOT important:

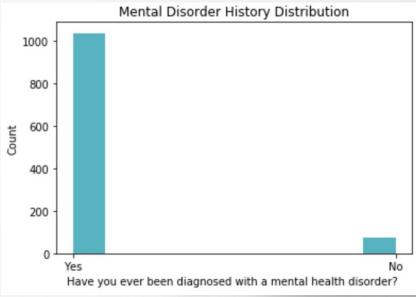
- Q5 What is your gender?
- Q21 Is your primary role within your company related to tech/IT?



DIVE INTO IMPORTANT FEATURES

Do you currently have a mental health disorder? 'Yes'





NEXT STEPS

- Pitch the model to HR
- Build a recommender system to suggest further help



CONNECT WITH ME



Annie Shieh
in https://www.linkedin.com/in/an-shieh/
annieshieh12@gmail.com