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EMPLOYEE ATTRITION CASE STUDY

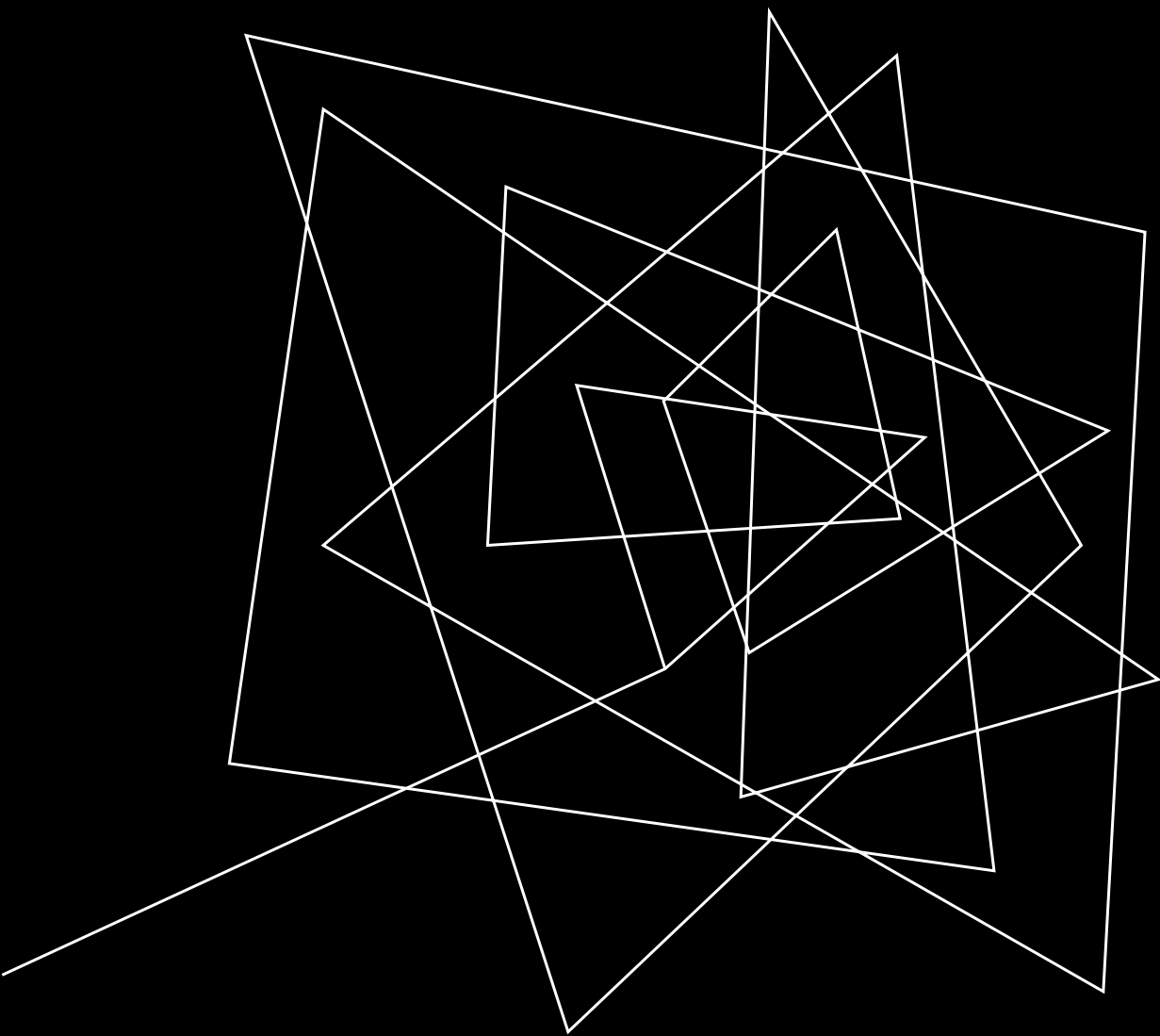
By Malak Mosly

PREDICTING ATTRITION...

- Important for Workforce Planning
- More efficient budgeting
- Improving productivity
- Enriching employee's lives

EMPLOYEE DATA

- Obtained from [Kaggle](#)
- 29 factors accounted for

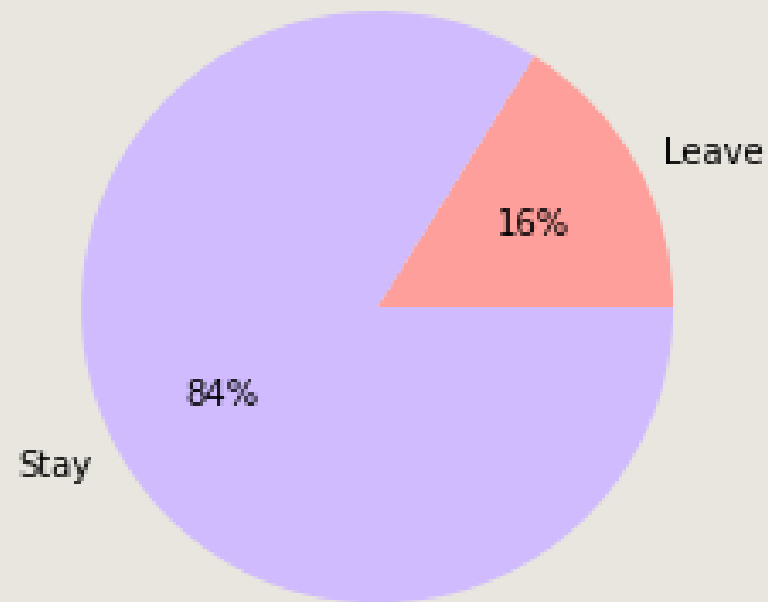


PRIMARY GOALS

- Predict attrition accurately
- Highlight critical factors

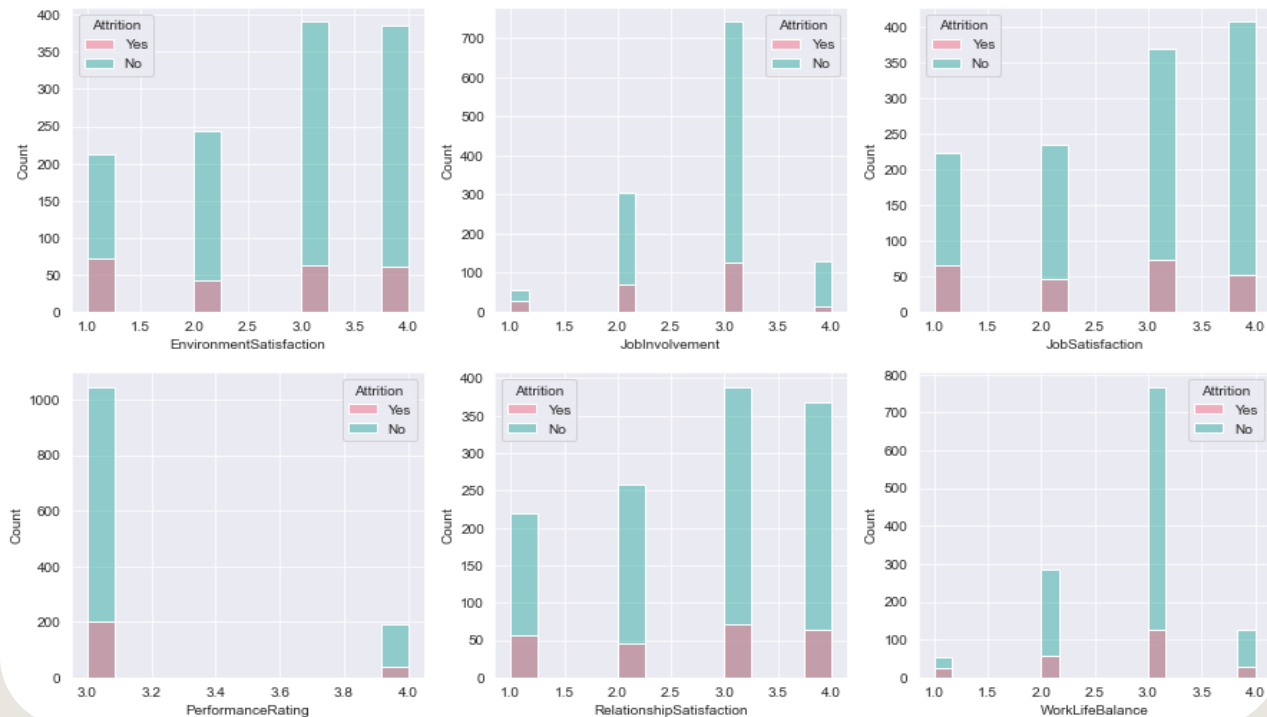
FIRST LOOK

Company Attrition Breakdown

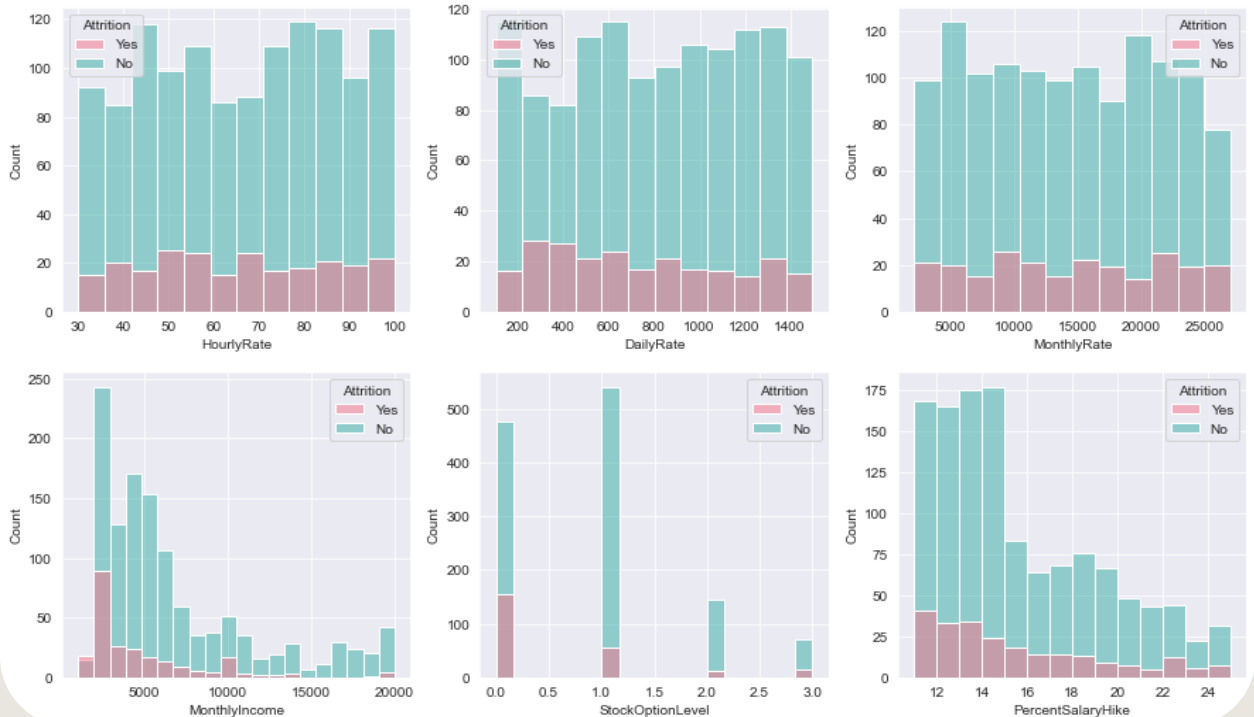


FIRST LOOK (CONT.)

Attrition and Overall Satisfaction



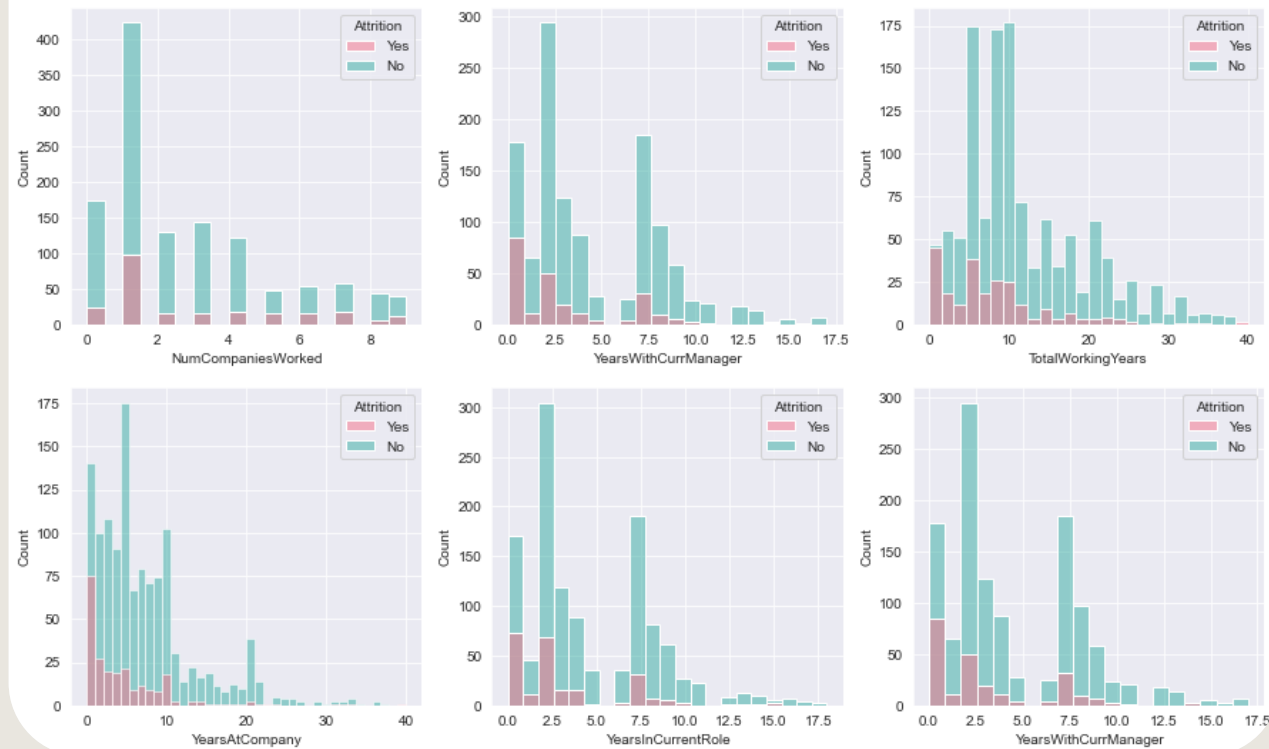
Attrition and Benefits



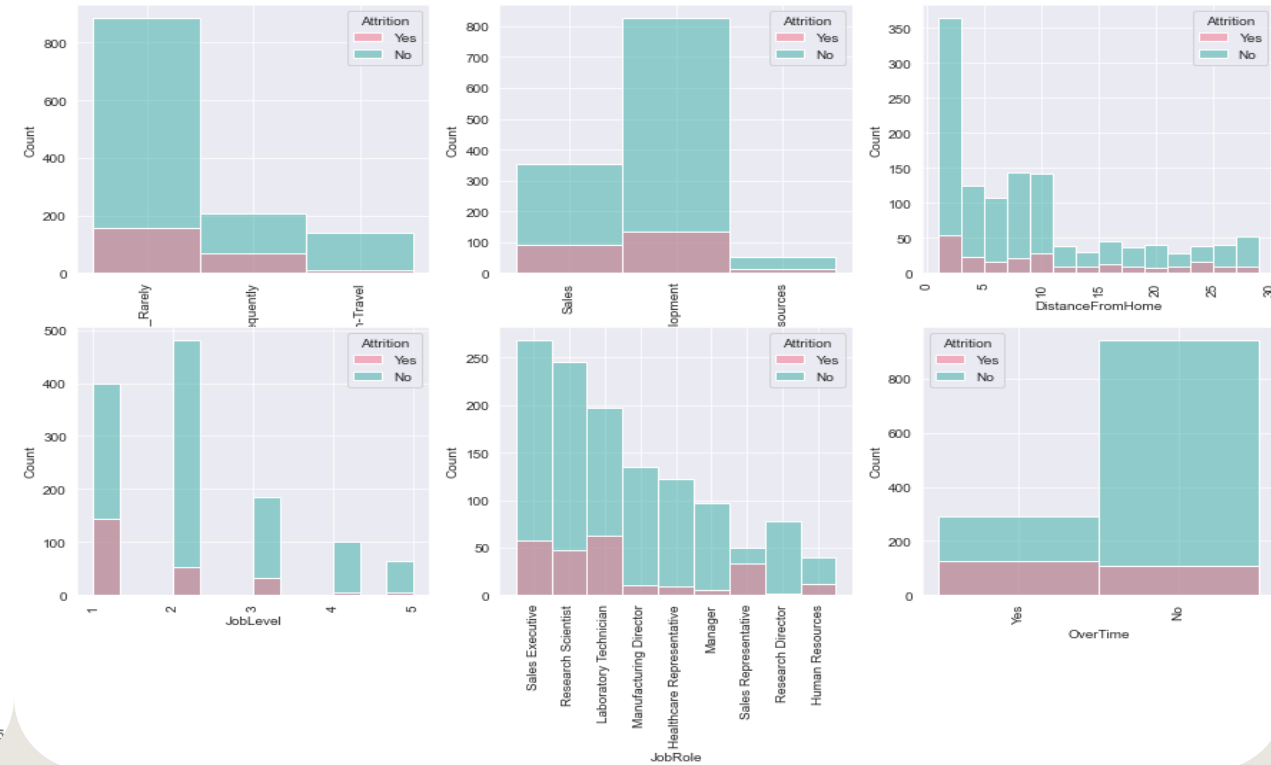
Attrition Case Study

FIRST LOOK (CONT.)

Attrition and Years at Company

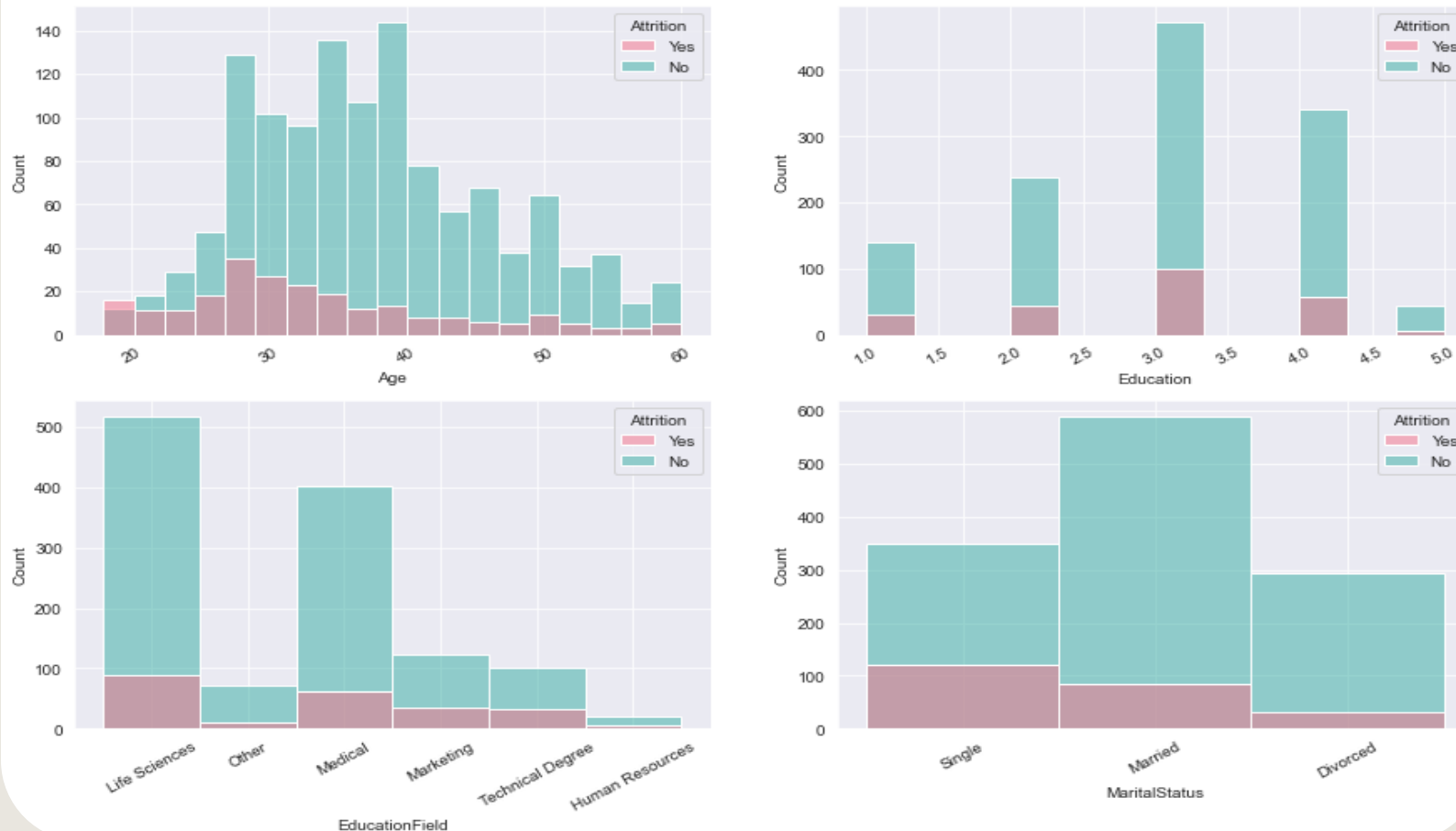


Attrition and Job Type



FIRST LOOK (CONT.)

Attrition and Employee Demographics



MODELING

- Four ML models chosen
- One basic regression model
- Three classification models
- Model performance tested and compared

MODEL PERFORMANCES

	Logistic Regression	Gradient Boosting	Random Forest	XGB
Accuracy	85.71%	86.39%	86.39%	84.81%
Avg. CV score	85.22%	86.6%	85.5%	85.7%
Avg. f1 score	84%	84%	84%	82%

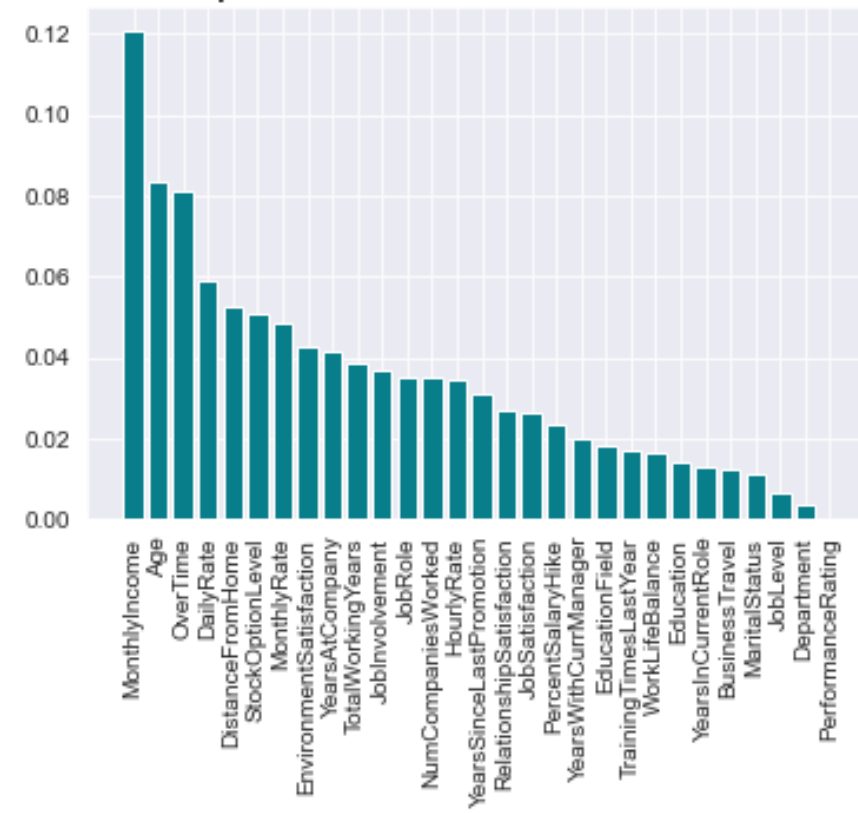
MOST IMPORTANT FACTORS

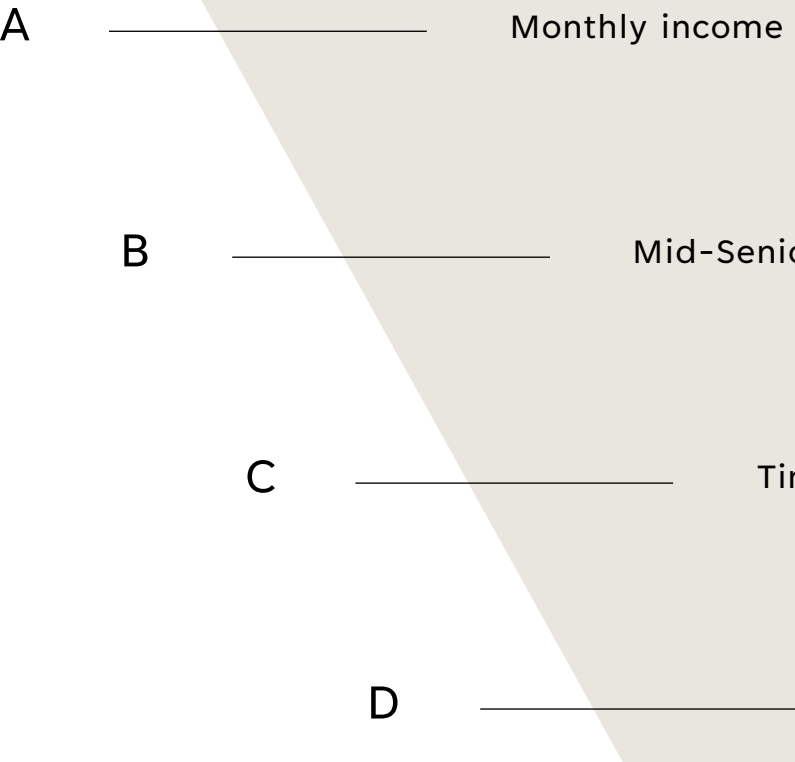
- Most critical features:

1. Monthly Income
2. Age
3. Overtime
4. Distance from home
5. Stock option level

Most relevant satisfaction metric was environment satisfaction

Feature importances obtained from coefficients



- 
- A _____ Monthly income critical incentive for retention
- B _____ Mid-Senior level employees most likely to stay
- C _____ Time and resources for commute important factor
- D _____ Additional benefits (e.g., stock options) can increase retention

INTERPRETATIONS



KEY RECOMMENDATIONS

COMPETITIVE MONETARY INCENTIVES

- Prioritize up-to-date salaries
- Drive compensation satisfaction via benefits

FLEXIBILITY IN THE WORKPLACE

- Offer more hybrid/remote opportunities
- Focus on employee recognition



SUMMARY

Being able to accurately predict attrition brings a variety of benefits. It allows the company to confidently carry out Workforce Planning, which leads to more effective budgeting, and drives employee morale and productivity. This will drive long-term profitability and innovation and will simultaneously increase employee's quality of life.



THANK YOU

Malak Mosly

malakmosly@hotmail.com

[Code](#)