

Abstract geometric lines in the top-left corner of the page, consisting of several overlapping, irregular polygons and lines that create a complex, layered effect.

# EMPLOYEE ATTRITION CASE STUDY

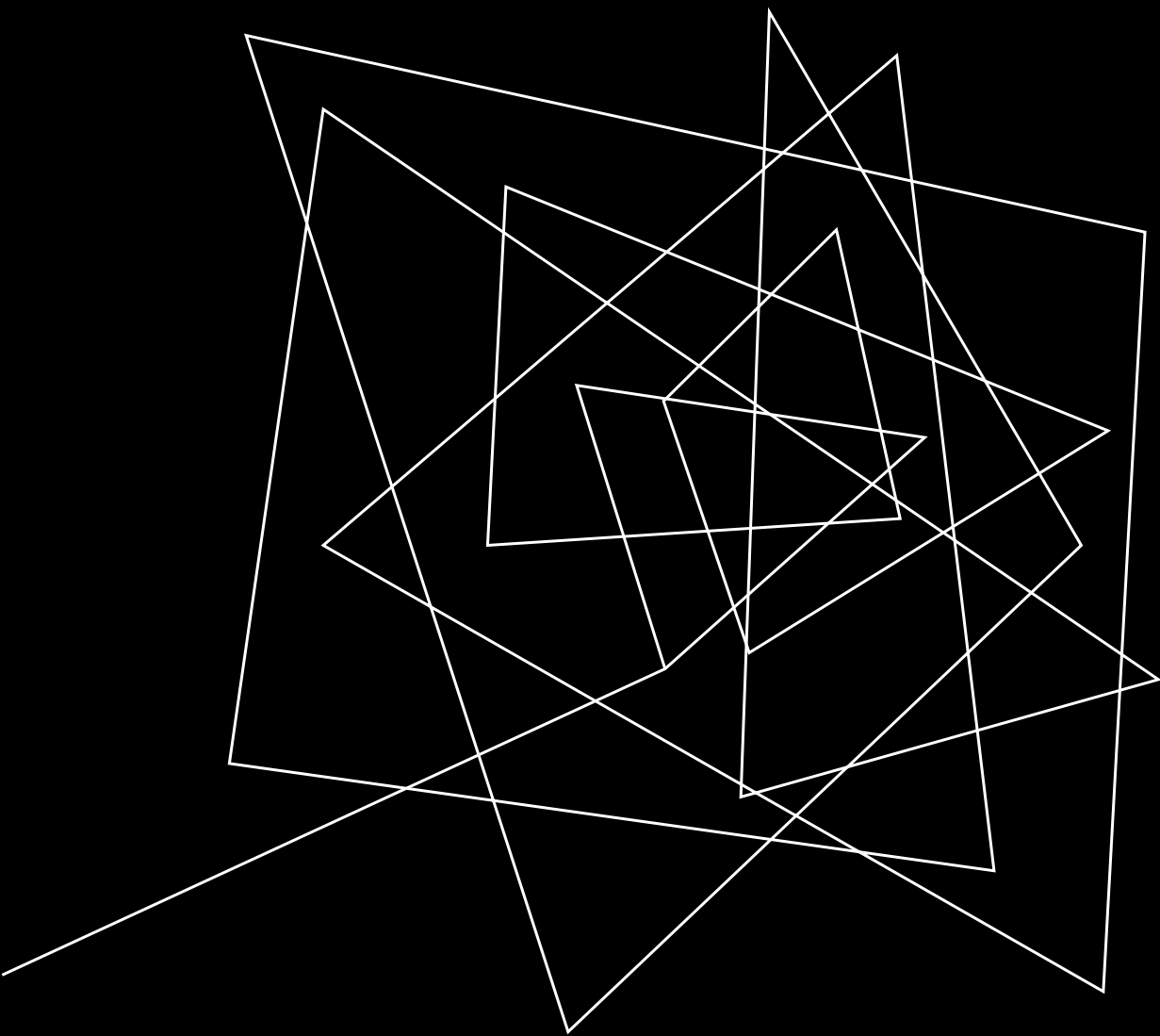
By Malak Mosly

# PREDICTING ATTRITION...

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

# EMPLOYEE DATA

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

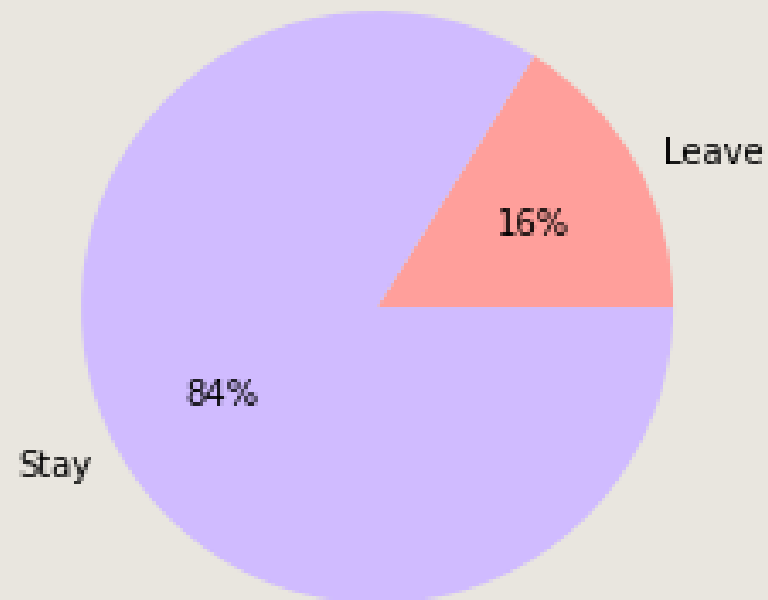


## PRIMARY GOALS

- Predict attrition accurately
- Highlight critical factors

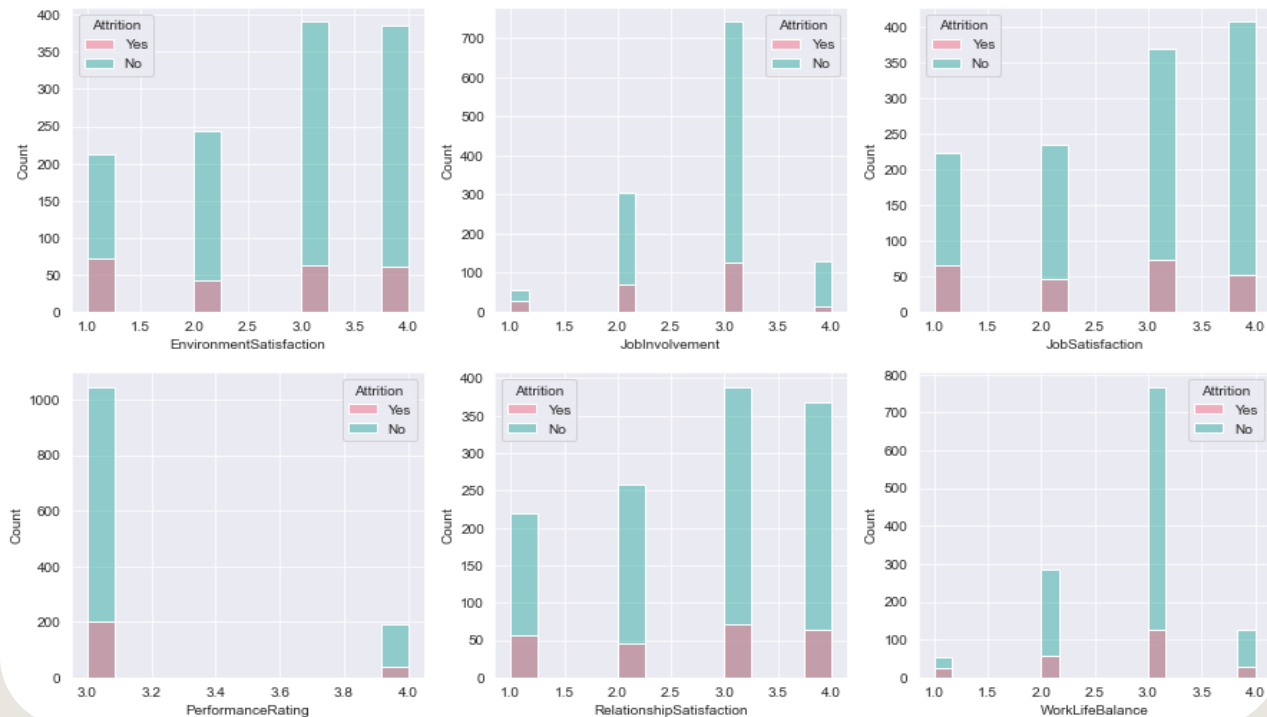
# FIRST LOOK

## Company Attrition Breakdown

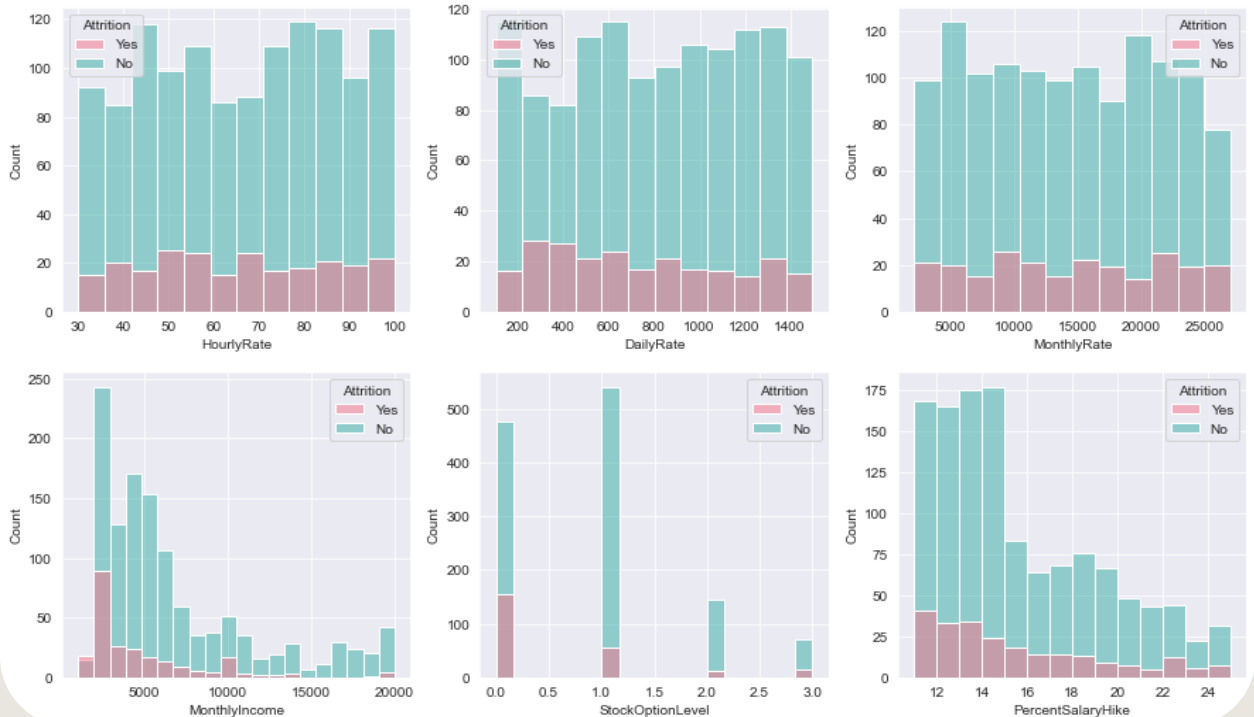


# FIRST LOOK (CONT.)

Attrition and Overall Satisfaction



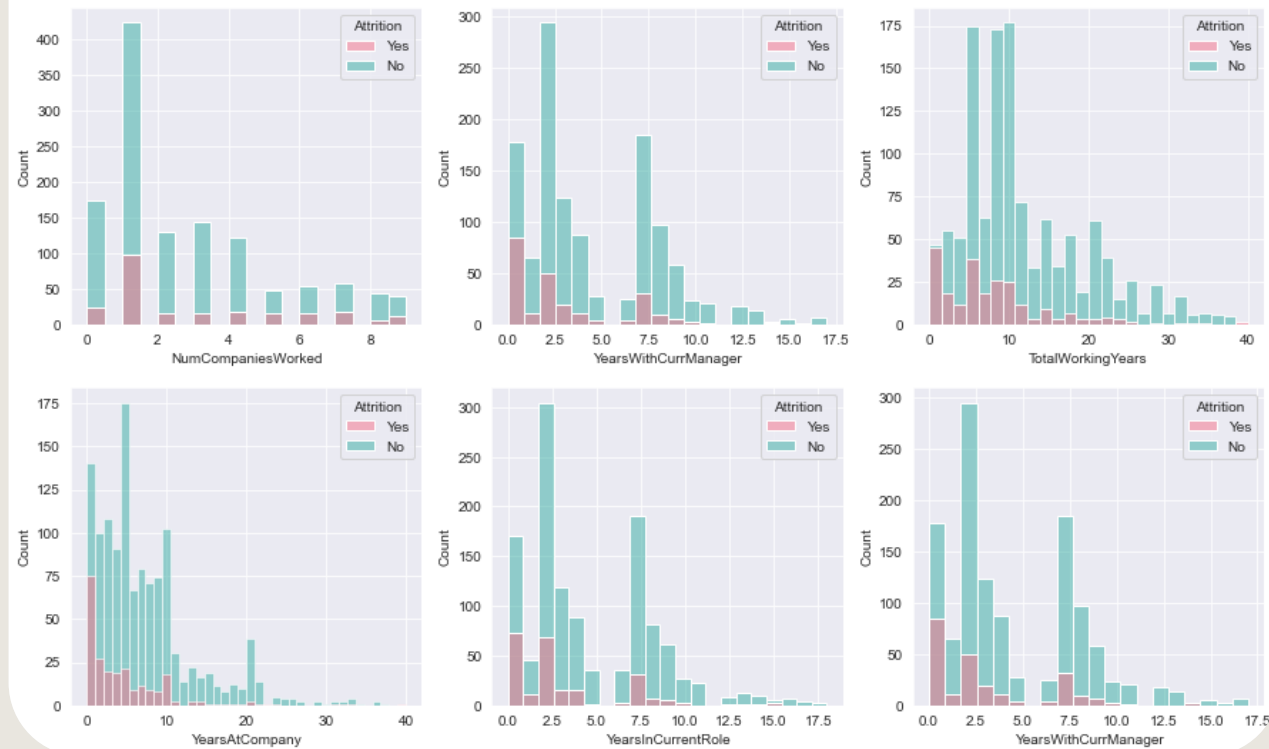
Attrition and Benefits



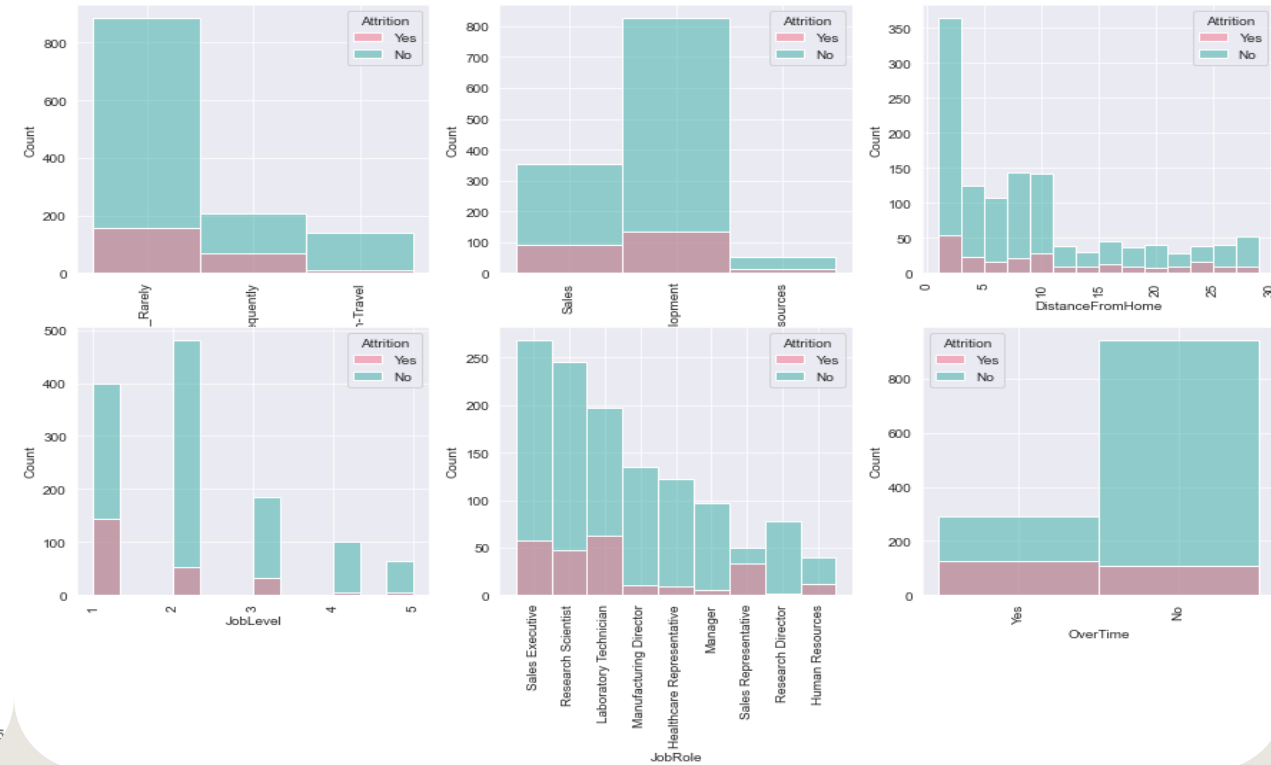
Attrition Case Study

# FIRST LOOK (CONT.)

## Attrition and Years at Company

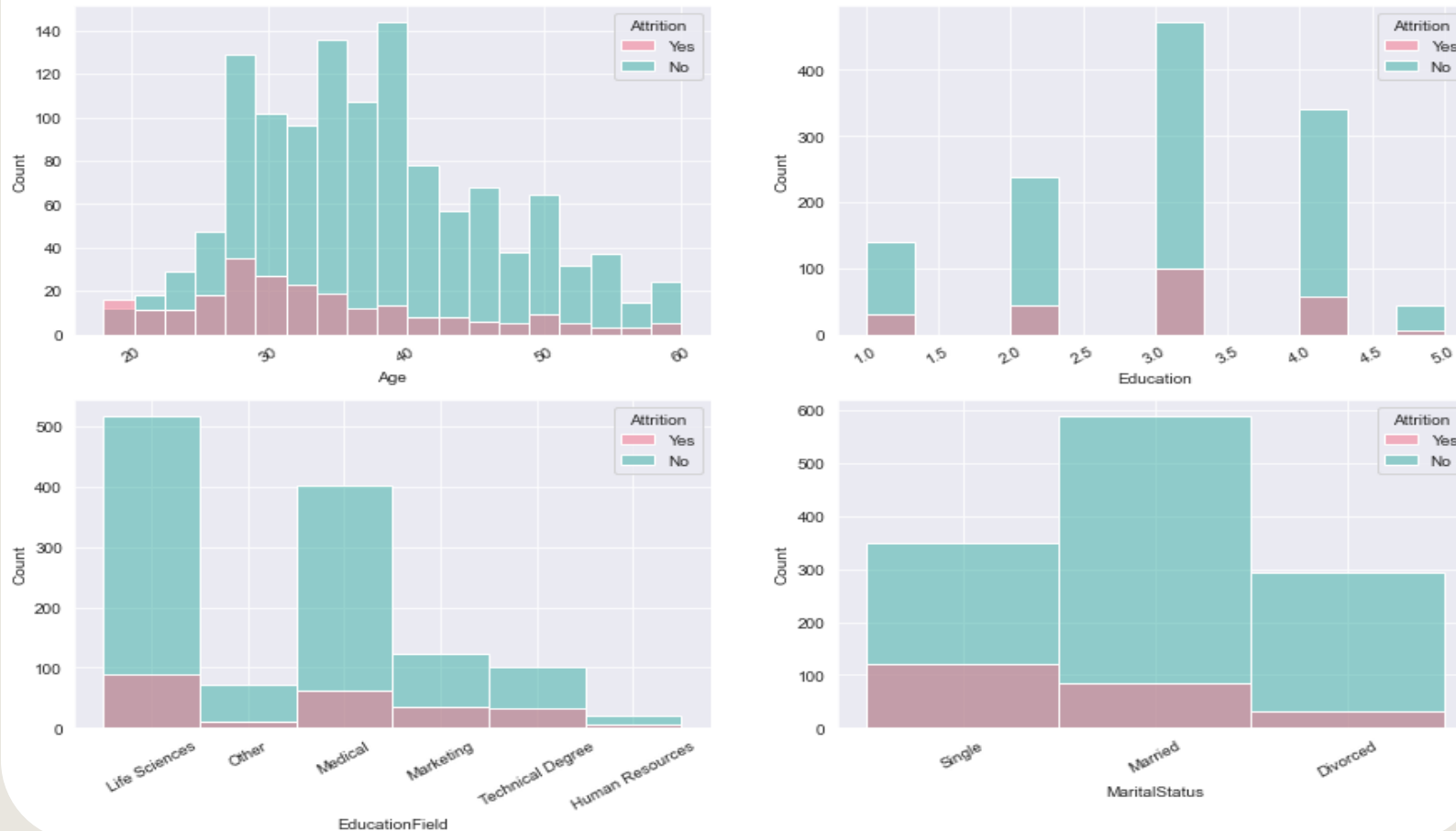


## Attrition and Job Type



# 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%

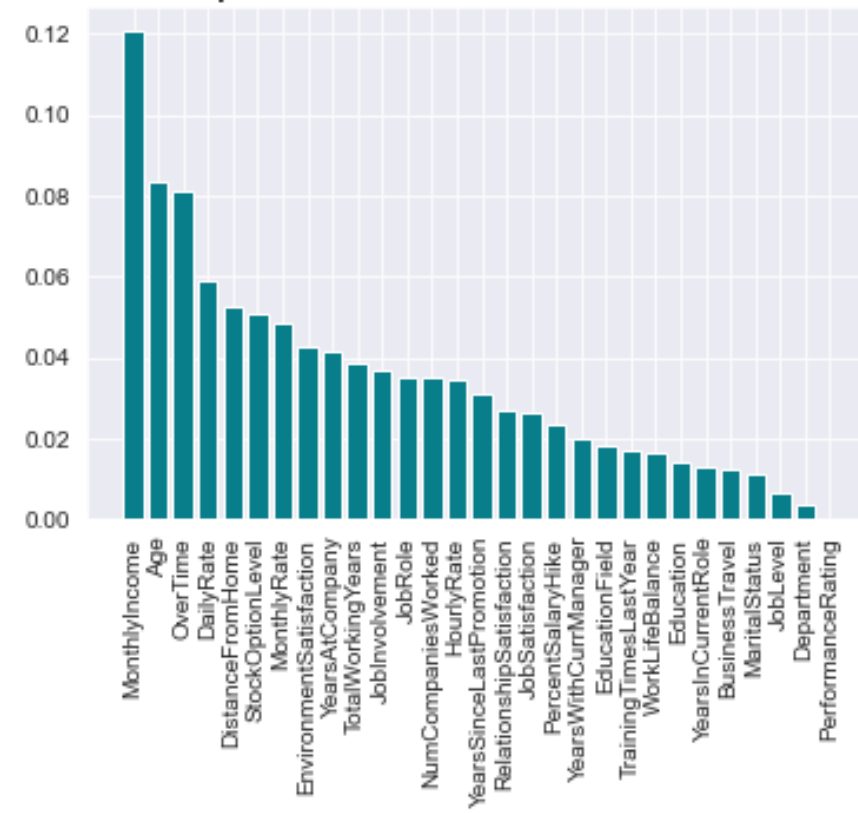
# MOST IMPORTANT FACTORS

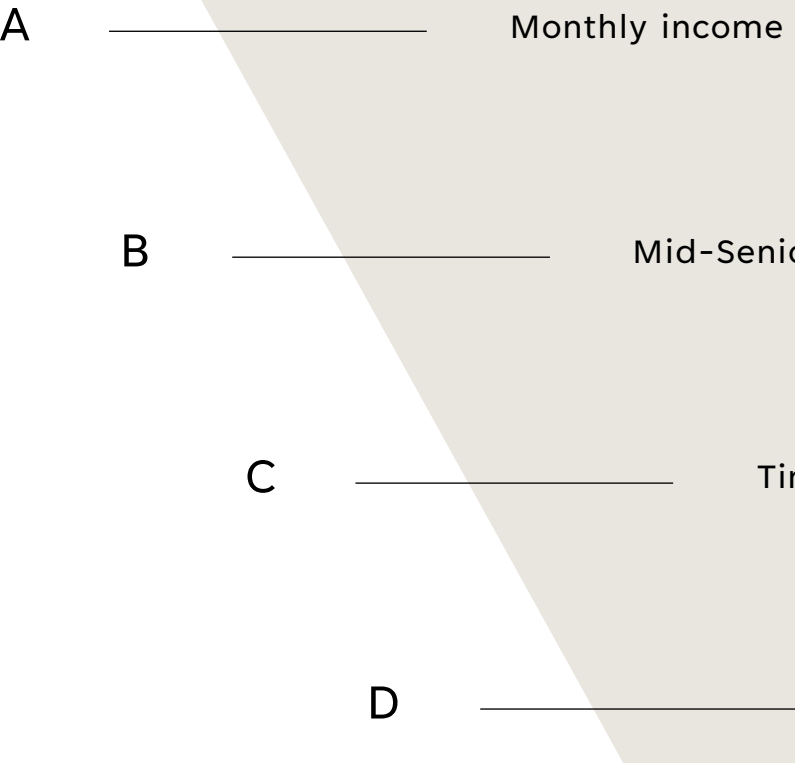
- Most critical features:

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

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[Code](#)