

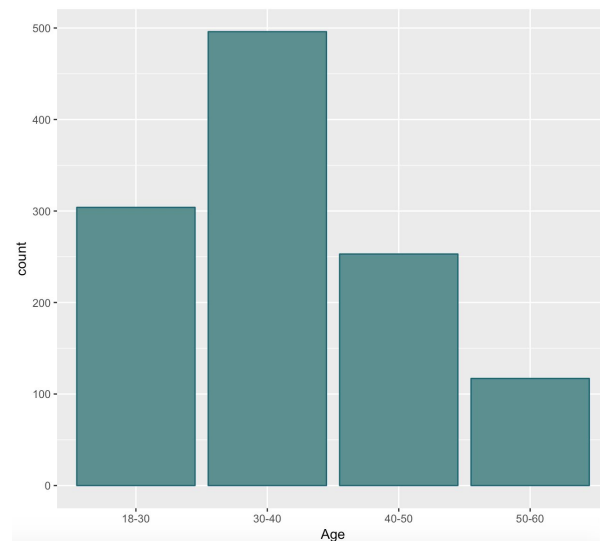
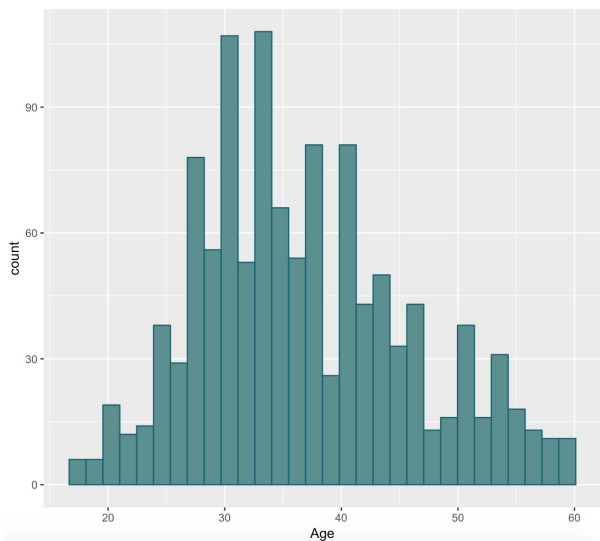
# DDS Analytics: Employee Data Evaluation

Kristen McCrary Rollins  
December 9, 2018



# Data Cleaning

- Converted **quantitative** variables to **categorical**
  - Example: Age categories of 18-30, 30-40, 40-50, 50-60





Attrition	Percent
No	0.8393162
Yes	0.1606838

Education	No	Yes
1	0.8129496	0.1428571
2	0.8337079	0.1487342
3	0.8468085	0.1531915
4	0.8512658	0.1662921
5	0.8571429	0.1870504

BusinessTravel	No	Yes
Non-Travel	0.7511111	0.0909091
Travel_Frequently	0.8538922	0.1461078
Travel_Rarely	0.9090909	0.2488889



## Top Attrition Factors

1. Overtime
2. Job Role
3. Job Involvement
4. Job Level
5. Marital Status

	No	Yes
Divorced	0.9204545	0.0795455
Married	0.8662900	0.1337100
Single	0.7440000	0.2560000

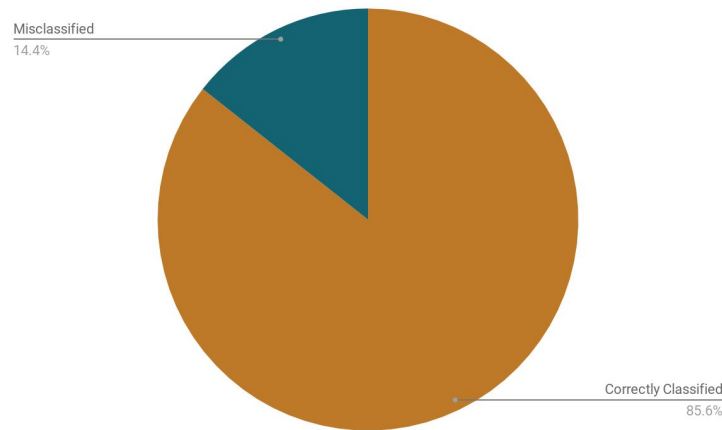


# KNN Classification

Predictors used in k=3 KNN model:

1. Overtime
2. Job Role
3. Job Involvement
4. Job Level
5. Marital Status
6. Work Life Balance

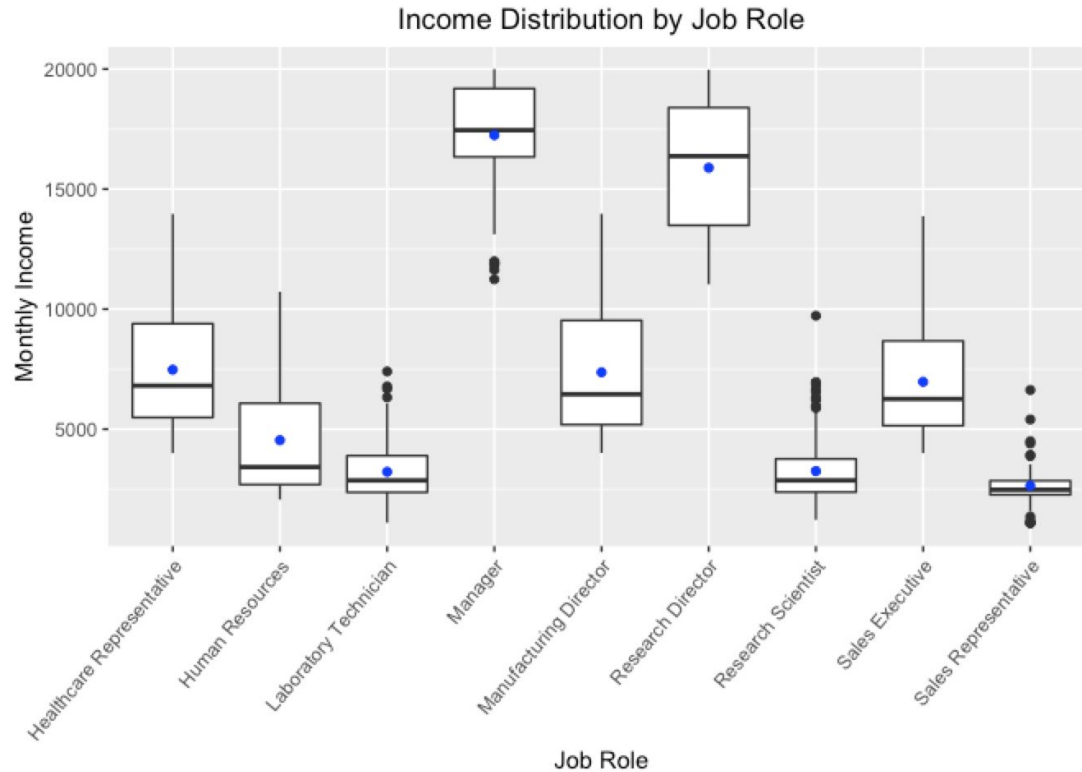
Accuracy: ~86%



Sensitivity: ~86%

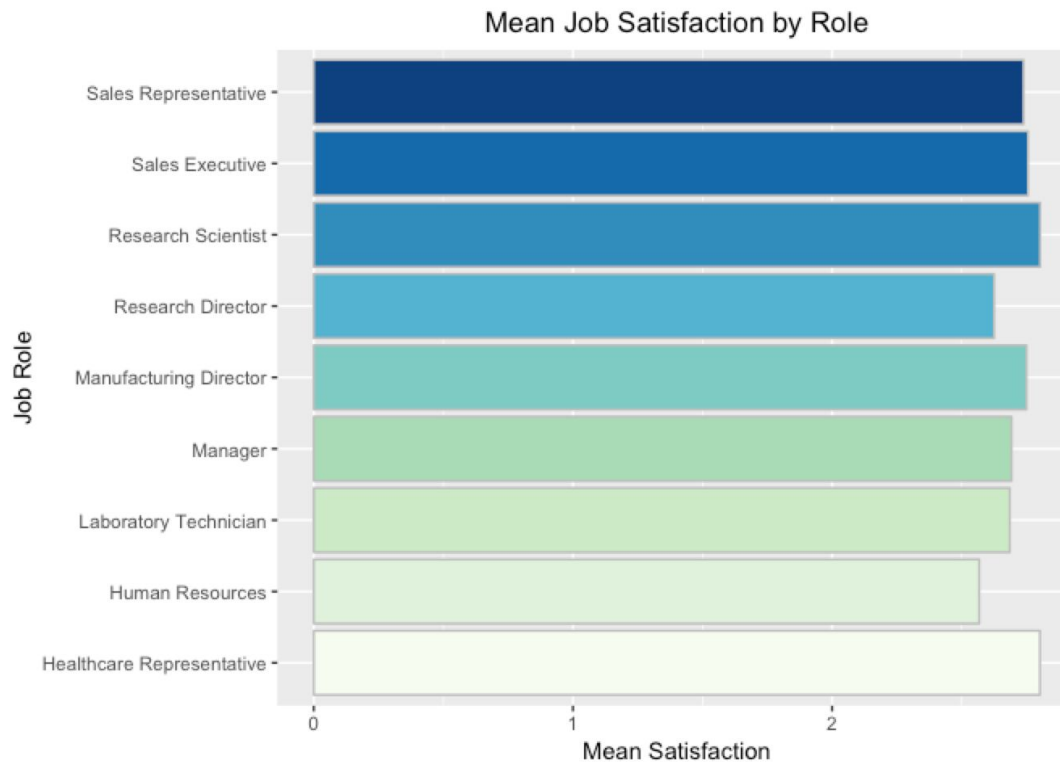
Specificity: ~71%

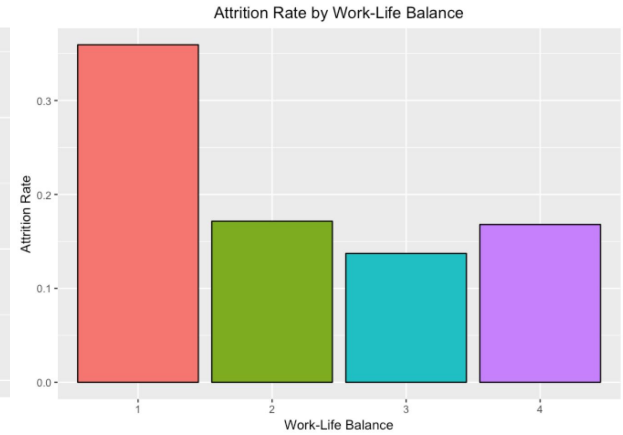
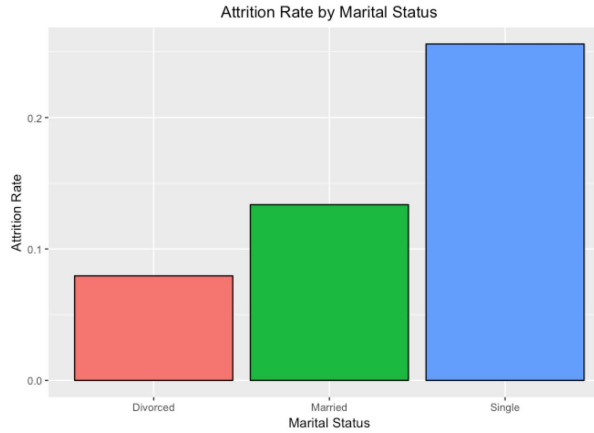
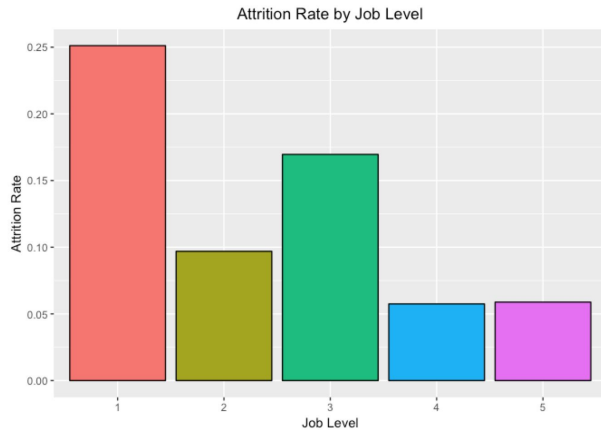
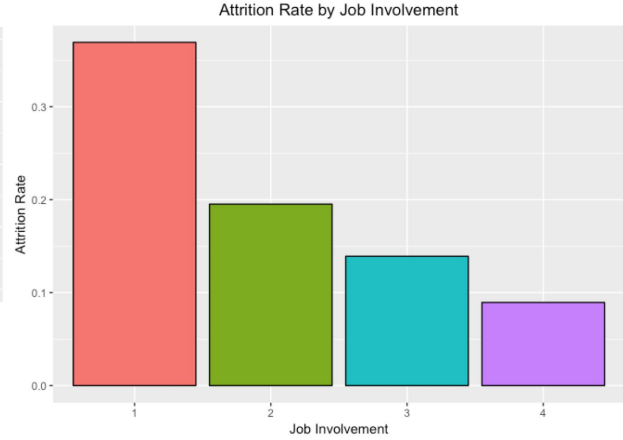
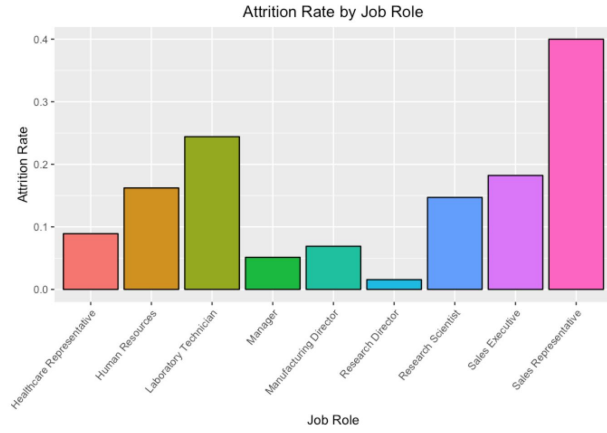
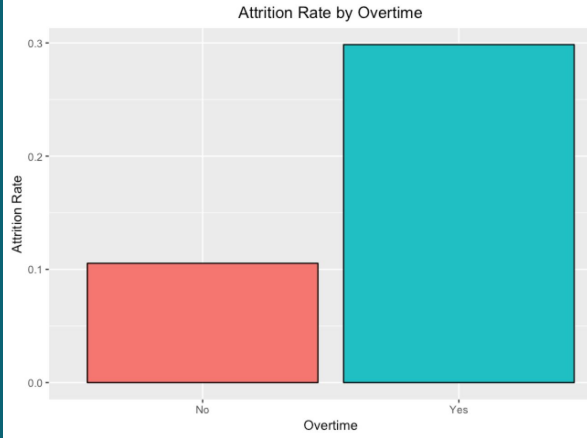
# Job Role Trends





# Job Role Trends







# Summary

- Factors such as overtime and marital status can predict attrition
- Attrition is influenced more by content/quality of job than by salary

