Employee Attrition Prediction

UNDERSTAND & MANAGE YOUR EMPLOYEES BETTER

Problem & Motivation

▶ A number of employees leave due to various reasons

▶ Waste of time & money on training those employees

▶ Aim to increase the effectiveness of employee management & better allocate their resources.

Web App Demo

HTTP://MSIA423-935455349.US-EAST-1.ELB.AMAZONAWS.COM/ABOUT

Data Description

▶Source:
https://www.kaggle.com/datasets/colearninglounge/employee-attrition

  ▶A set of data points on the employees who are either currently working within the company or have resigned.

  ▶With features related to attrition

▶RDS usage:

  ▶ Store processed data (related employee features and corresponding attrition results)

  ▶ Store newly added employee data (from user input)

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| EmployeeNumber | EnvironmentSatisfaction | JobInvolvement | JobLevel | JobSatisfaction | PerformanceRating | RelationshipSatisfaction | YearsSinceLastPromotion | WorkLifeBalance | MaritalStatus | Gend
er | OverTime | Attrition |
---+------------+-------------
|           1 |                     2 |            3 |      2 |            4 |              3 |                     1 |                    0 |            1 | Single      | Fema
le | Yes    | Yes    |
|           2 |                     3 |            2 |      2 |            2 |              4 |                     4 |                    1 |            3 | Married     | Male
 | No     | No     |
|           4 |                     4 |            2 |      1 |            3 |              3 |                     2 |                    0 |            3 | Single      | Male
 | Yes    | Yes    |
|           5 |                     4 |            3 |      1 |            3 |              3 |                     3 |                    3 |            3 | Married     | Fema
le | Yes    | No     |
```

Model

Random Forest Model:

- Offline model
- Binary classification

Success criteria:
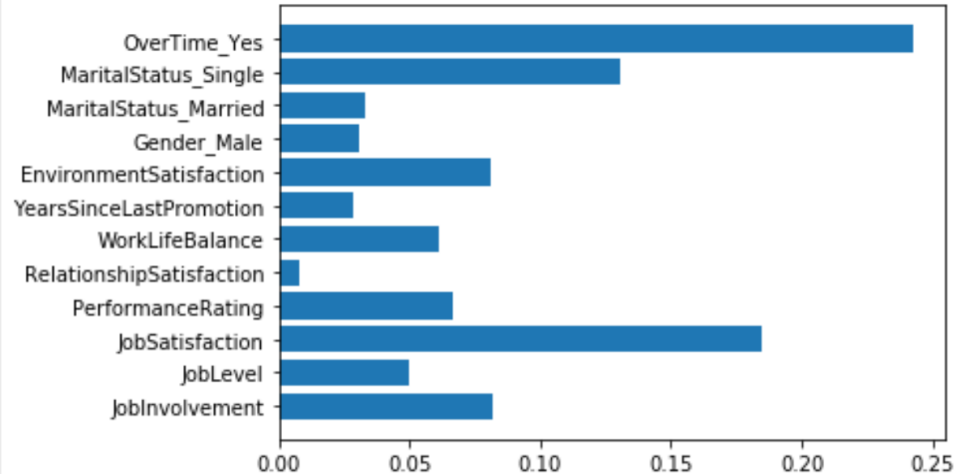
AUC

Accuracy

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AUC on test: 0.848
Accuracy on test: 0.873
                 Predicted negative  Predicted positive
Actual negative                 163                    5
Actual positive                  21                   15
```

An interesting insight

▶ WORKING OVERTIME IS MOST LIKELY TO RESULT IN EMPLOYEE ATTRITION

Thank you!

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