**Project Name: Attrition Prediction**

**Project Goals**

Determine active employees that are high risk of attrition

**Description**

Build a statistical model which gives us the risk score (probability of employee leaving) for employees by capturing important factors attributing to attrition using Human Resource data for current and past employee.

**Input**

* Active and Inactive Employee (Total (2980) Current (1596) and Past (1384) Employees) from 2015 and 2016 years
* Vertical - 'AR Follow up'
* Job Role - Team Member, Desk Head, Team Leader
* Attributes
  + Experience in AGS
  + Employee Age
  + Gender
  + Marital Status
  + Work Location
  + Job Role
  + Experience Type
  + Prod Avg. During Notice
  + Course
  + Last30DaysLeaveCount
  + Total Extra Hours Worked
  + Function
  + Shift
  + Transport Mode
  + Engagement Index

**Assumptions**

* Considered current work related attributes only
* Considered attributes (where missing data was less than 20%) with imputation
* Previous location attributes will not be useful to tell about attrition as dynamics of business is changed significantly within last 2 years (Chennai to Hyderabad)
* Education Courses grouped -
  + B. A. / B. Com/ B. Pharm
  + HSC
  + BCA/ BBA
  + MA/ M. Com
  + BE/ B. Tech
  + MBA
  + BSc
  + MCA
  + CS/CA (inter)
  + ME/ M. Tech
  + Diploma
  + MSc/ M. Pharm/ MPhil
  + SSLC

**Findings**

* Last 30 days leave count is the best predictor which contribute highest to the analysis (average for Current employee is 2.2 days while for employee left is 10.2 days)
* People are leaving in early in their career (Average AGS experience of past employee is 7.9 months while current employee is 16.1 months)
* Employee age is not significantly different (Average age for past employee 24.6 years while current employee is 24.9 years)
* Single employees have more probabilities of leaving as (46% of Unmarried people left while 37.5% of Married people left)
* Gender is not a major contributor as almost equal percentage of people left from both gender (45.89% Male left while 47.44% female left)
* When other conditions are same compared to Chennai, Hyderabad employees have higher odds of leaving, while Vellore employee have lower odds

**Important Factors**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Level | Effect on Attrition | Importance |
| Last30DaysLeaveCount |  | More likely | Very High |
| Experience in AGS |  | Less likely | Very High |
| Engagement Index | Red | More likely | Very High |
| Shift | 05:30PM-02:30AM | More likely | Very High |
| Shift | 06:00PM-03:00AM | Less likely | High |
| Marital Status | Unmarried | More likely | High |
| Transport Mode | Cab | Less likely | Medium |
| Shift | 04:00PM-01:00AM | More likely | Medium |
| Function | Voice | More likely | Medium |
| Work Location | Hyderabad | Less likely | Medium |
| Work Location | Vellore | More likely | Medium |
| Transport Mode | Two Wheeler | Less likely | Medium |

**Model Results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Count | Current Employee probabilities | Employee Leaving probabilities | Accuracy % |
| Train Data | 2235 | 0.1709 | 0.8028 | 87.74 |
| Test Data | 745 | 0.1514 | 0.8330 | 90.23 |
| All Data | 2980 | 0.1717 | 0.8042 | 87.85 |