Problem Identification Assignment:

A company works with number of employees, all the works are dependents on the employees. Even if one of the employees resign the job immediately then assigned work will be not finished at the time, so delivery of the project to the clients will be delayed. Company planned to make solution for this, they want to know which employee may resign next. If they know previously, they can arrange alternative to avoid such problem. As an AI Engineer you must give Solution to this.

A) How will you achieve this in AI?

B) Find out the 3 -Stage of Problem Identification

C) Name the project

D) Create the dummy Dataset

**A) How will you achieve this in AI?**

By using the below historical employee data we can predict which employees are likely to resign this /next month,

The fields are age, gender, salary, tenure, performance ratings, absenteeism, engagement scores, promotions history, salary changes, employee reviews, comments, self-feedback, peer feedback, and manager feedback,Job Satisfaction we can predict which employees are likely to resign.

This prediction leverages both numerical and textual data through a combination of machine learning and natural language processing techniques. We can train a classification model under supervised learning that accurately identifies employees at risk of resignation based on that we generate actionable insights for company to take preventive measures.

**B) Find out the 3 -Stage of Problem Identification**

Stage 1 – Machine Learning & Natural Language Processing (To analyse previous year feedback so far & Sentiment analysis)

Stage 2 – Supervised Learning

Stage 3 – Classification

**C) Name the project**

Attrition Risk Forecast Model.

**D) Dataset**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Employee ID** | **Age** | **Gender** | **Department** | **Role** | **Tenure** | **Salary** | **Performance Rating** | **Absenteeism** | **Engagement Score** | **Recent Promotion** | **Recent Salary Change** | **Weekend support** | **Weekly Working hours** | **Self feedback** | **Peer feedback** | **Job\_Satisfaction**  **(1 to 5)** | **Manager feedback** | **Resignation Prediction** |
| 1 | 30 | M | IT | Developer | 3 | 70000 | 4 | 2 | 8 | No | 5% | No | 40 | Good | Good | 4 | Good | No |
| 2 | 45 | F | HR | Manager | 10 | 90000 | 3 | 5 | 6 | Yes | 10% | Yes | 45 | Good | Good | 4 | Good | No |
| 3 | 28 | M | IT | Sr Developer | 2 | 100000 | 5 | 0 | 9 | No | 4% | Yes | 55 | Heavy work load | Good | 2 | Good | Yes |
| 4 | 35 | F | Marketing | Analyst | 4 | 60000 | 2 | 3 | 5 | No | 0% | No | 40 | Good | Good | 3 | Good | No |
| 5 | 50 | M | IT | Developer | 15 | 95000 | 4 | 1 | 7 | Yes | 8% | No | 48 | Good | Need to improve | 4 | Good | No |
| 6 | 40 | F | Finance | Accountant | 8 | 75000 | 3 | 4 | 6 | No | 3% | No | 40 | No promotion, Less salary hike | Good | 1 | Need to improve skills | Yes |
| 7 | 29 | M | IT | Developer | 3 | 68000 | 5 | 2 | 8 | No | 5% | Yes | 45 | Good | Good | 3 | Good | No |
| 8 | 33 | F | Sales | Sales Exec | 5 | 70000 | 4 | 3 | 7 | No | 4% | No | 48 | Good | Good | 3 | Need to improve | No |
| 9 | 37 | M | IT | Technical Architect | 7 | 120000 | 3 | 2 | 6 | No | 1% | Yes | 48 | Impacting Work life balance | Not supportive | 2 | Need to focus on team management as well | Yes |
| 10 | 42 | F | HR | Recruiter | 9 | 78000 | 4 | 1 | 7 | No | 5% | No | 40 | Good | Good | 5 | Good | No |