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 employee dataset, which includes features such as age, gender, salary, tenure, performance ratings, absenteeism, engagement scores, recent promotions, salary changes, employee reviews, comments, self-feedback, peer feedback, and manager feedback, 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, enabling proactive measures to retain valuable talent and prevent project delays.

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

Stage 1 – Machine Learning & Natural Language Processing

Stage 2 – Supervised Learning

Stage 3 – Classification

**C) Name the project**

Employee Resignation Analytics (ERA)

**D) Create the dummy 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** | **Manager feedback** | **Resignation Prediction** |
| 1 | 30 | M | IT | Developer | 3 | 70000 | 4 | 2 | 8 | No | 5% | No | 40 | Good | Good | Good | No |
| 2 | 45 | F | HR | Manager | 10 | 90000 | 3 | 5 | 6 | Yes | 10% | Yes | 45 | Good | Good | Good | No |
| 3 | 28 | M | IT | Developer | 2 | 65000 | 5 | 0 | 9 | No | 4% | Yes | 55 | Heavy work load | Good | Good | Yes |
| 4 | 35 | F | Marketing | Analyst | 4 | 60000 | 2 | 3 | 5 | No | 0% | No | 40 | Good | Good | Good | No |
| 5 | 50 | M | IT | Senior Dev | 15 | 120000 | 4 | 1 | 7 | Yes | 8% | No | 48 | Good | Need to improve | Good | No |
| 6 | 40 | F | Finance | Accountant | 8 | 75000 | 3 | 4 | 6 | No | 3% | No | 40 | No promotion, Less salary hike | Good | Need to improve skills | Yes |
| 7 | 29 | M | IT | Developer | 3 | 68000 | 5 | 2 | 8 | No | 5% | Yes | 45 | Good | Good | Good | No |
| 8 | 33 | F | Sales | Sales Exec | 5 | 70000 | 4 | 3 | 7 | No | 4% | No | 48 | Good | Good | Need to improve | No |
| 9 | 37 | M | IT | Manager | 7 | 85000 | 3 | 2 | 6 | Yes | 6% | Yes | 48 | Impacting Work life balance | Not supportive | Need to focus on team management | Yes |
| 10 | 42 | F | HR | Recruiter | 9 | 78000 | 4 | 1 | 7 | No | 5% | No | 40 | Good | Good | Good | No |