

Problem Identification Assignments

Hope Artificial Intelligence - Scenario Based Learning

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?

To predict employee retention, I will:

1. **Select a Suitable Domain-Specific Algorithm** – Choosing between Machine Learning (ML) or Natural Language Processing (NLP), rather than Deep Learning (DL) or Time Series models.
2. **Prepare a Large Dataset** – Train the model using historical employee data.
3. **Test the Model** – Validate predictions using the company's past employee records to ensure accuracy.

B) Find out the 3 -Stage of Problem Identification

1. Domain Selection
 - Deep Learning and Time Series are not suitable.
 - Natural Language Processing. (Initially the choices were ML or NLP but after creating D) Create the dummy Dataset, I have concluded the domain to be NLP)
2. Learning Type
 - The output is a clear binary classification: "Stay" or "Resign".
 - This falls under Supervised Learning.
3. Algorithm Type
 - Since the output is categorical (Stay or Resign), we use Supervised Learning - Classification.

C) Name the project: Employee Retention Classifier

D) Create the dummy Dataset

Input						Output
Delta Value (Job Market Salary - Current Salary)	Employee Self-Evaluation Comments	Active in Job Market Social Media	Recent Life-Changing Events	Performance Evaluation by Manager	Leave Without Prior Notice (Count)	Prediction (Stay/Resign)
1000.00	No teamwork, no interest, no motivating environment.	1	1	Been causing production bugs	2	resign
-500.00	Love the challenges and opportunity to learn and grow	1	0	Effective in mitigating cross-functional dependencies	1	stay
0.00	I deliver what is assigned to me.	0	0	Engaged in delivering the product	0	stay