Bytexl's Guided Project: AI Based Fake Job Post Prediction

Project Overview:

The project, "AI Based Fake Job Post Prediction," aims to support The Fake Job Post Prediction project addresses this pressing issue by developing a robust system to identify and flag potentially fraudulent job postings.

Prerequisites

- Programming: Proficiency in Python or R for machine learning.
- Data Analysis: Familiarity with libraries like Pandas and Scikit-learn.
- Machine Learning Knowledge:
  Understanding of algorithms like KNN, Naive Bayes, Random Forest, and SVM.
- Data Handling:
  Ability to gather and preprocess datasets, especially text data.
- Feature Engineering:
  Basic knowledge of NLP techniques like sentiment analysis and topic modeling.
- Model Evaluation:
  Familiarity with metrics like accuracy, precision, and recall.
- Real-Time Systems:
  Understanding of how to develop real-time detection systems.
- User Awareness:
  Good communication skills for creating educational materials on job scams.
- Legal Awareness:
  Basic understanding of the legal aspects of online job postings.
- Collaboration:
  Ability to work well in teams with diverse skills.
- Research Skills:
  Capability to conduct literature reviews to stay updated on advancements.

Learning Outcomes:

1. **Technical Skills Development**: You'll gain practical experience with Python or R, diving into machine learning techniques that are crucial for real-world applications.
2. **Data Management Mastery**: You'll learn how to gather, clean, and analyze job posting data, which will boost your confidence in handling real datasets.
3. **Understanding Machine Learni**ng: You'll explore various algorithms and learn how to select the best one for identifying fake job posts, deepening your understanding of the field.
4. **Model Evaluation Proficiency**: You'll learn how to assess your model's

performance using key metrics, equipping you to make data-driven improvements.

5. **Real-Time Application Skills**: You'll understand how to build systems that detect scams in real-time, preparing you for practical challenges in the job market.

6. **Research Skills Enhancement**: You'll improve your ability to conduct literature reviews, keeping you updated on the latest trends in fraud detection.

Skills Practiced:

- **AI Based Fake Job Post Prediction**
- **Data Collection and Cleaning(EDA)**
- **Feature Engineering**
- **Model Building Using Random Forest**
- **Flask , Restful Api Management**

Course Structure:

1. Introduction and Course Overview

- In this course, we'll address the issue of fraudulent job postings by developing a system to identify and flag fake listings. You'll gain hands-on experience in programming, machine learning, and data analysis.

2. Project Structure

- **Task 1: Research and Planning**
  Conduct a literature review and define project objectives.

- **Task 2: Data Collection**
  Gather datasets with legitimate and fraudulent job postings and preprocess the data.

- **Task 3: Feature Engineering**
  Select key features and apply natural language processing techniques.

- **Task 4: Model Development**
  Implement machine learning algorithms and train models.

- **Task 5: Model Evaluation**
  Evaluate model performance using accuracy and other metrics.

- **Task 6: Real-Time System Development**
  Design and test a prototype for a real-time detection system.

3. Execution on Learning Platform

- Use VS-code In your Local System
- Nimbus –Python on Bytexl
- Nimbus-Jupiter Notebook
- For GPU Use Google Colab

Educator Instructions:

1.Scenario Development:

- Create realistic scenarios for students to practice identifying fake job postings, such as:
  Monitoring specific job platforms for suspicious listings.
  Analyzing job descriptions to detect trends in fraud.

2.Student Orientation:

- Introduction and Objectives:
  Welcome students and explain the significance of the project.
  Outline the skills and knowledge they will gain.

- Data Gathering Assistance:
  Support students in finding and collecting datasets of both legitimate and fraudulent job postings. Offer guidance on data cleaning and preprocessing methods.

- Feature Selection Support:
  Help students identify relevant features and apply natural language processing techniques.

- Model Implementation Guidance:
- Assist in the application of machine learning algorithms and encourage teamwork.

- Results Analysis Help:
  Guide students in interpreting model performance metrics and results.

Objectives Summary:

This project focuses on developing a system to identify fraudulent job postings, providing students with hands-on experience in data analysis and machine learning. Educators will guide students through creating realistic scenarios, collecting and analyzing data, implementing machine learning models, and interpreting results.