

Backend Development Exercise: Sales Team Performance Analysis Using LLM

Objective

Develop a backend system that uses a Large Language Model (LLM) to analyze sales data and provide feedback on both individual sales representatives and overall team performance.

Task Description

Data Ingestion

- Implement a flexible mechanism to ingest sales data (format: CSV or JSON).

LLM Integration

- Integrate a Large Language Model (like GPT) for data analysis.
- The system should process data and generate insights for both individual representatives and the sales team as a whole.

API Development

Develop multiple RESTful API endpoints:

- An endpoint to query performance feedback for a specific sales representative.
- An endpoint to assess overall team performance.
- An endpoint for sales performance trends and forecasting.

Each endpoint should accept relevant parameters and return LLM-generated insights.

Feedback Generation

- Leverage the LLM to provide qualitative feedback and actionable insights based on the sales data.

Technology Choice

- You are free to use any backend technologies and frameworks you prefer.
- The API endpoints should be tested using API testing tools like Postman or Insomnia.
- You can use any LLM of your choice. We recommend using GPT
- It's not necessary to deploy the system to a cloud platform. You can run it locally and share the code repository with us as long as it's well documented and easy to run.

Submission Guidelines

Code Repository

- Use a public repository on GitHub or similar for your project.
- Include all necessary source code and files.

Readme File

- Your repository should contain a README.md file with:
 - Setup and run instructions.
 - An overview of the architecture and technologies used.

Sharing Your Work

- Reply to the email you received with a link to your repository.

Deadline

- Submit your work by 2nd December, 1 PM CT.
- It's ideal to submit your work within this time frame, but we understand that you may have other commitments. If you need more time, please let us know.

API Examples

1. Individual Sales Representative Performance Analysis

- **Endpoint:** /api/rep_performance
- **Method:** GET
- **Parameters:** rep_id (unique identifier for the sales representative)
- **Function:** Returns detailed performance analysis and feedback for the specified sales representative.

2. Overall Sales Team Performance Summary

- **Endpoint:** /api/team_performance
- **Method:** GET
- **Function:** Provides a summary of the sales team's overall performance.

3. Sales Performance Trends and Forecasting

- **Endpoint:** /api/performance_trends
- **Method:** GET
- **Parameters:** time_period (e.g., monthly, quarterly)
- **Function:** Analyzes sales data over the specified time period to identify trends and forecast future performance.

Feel free to reach out for any clarifications or questions. We are excited to see your innovative approaches to this challenge.