



Coding Assignment - Personalized AI Financial Advisory

Background

You are tasked with developing a custom AI financial advisory system that provides personalized recommendations based on a user's financial data. Rather than using off-the-shelf pre-trained LLMs, you must train a custom model that can analyze financial patterns and provide tailored advice. You may take a base model to speed up however the end solution must be your custom model.

Data

Generate a dataset containing anonymized financial records including:

- Investment portfolios (asset classes, allocation percentages, historical returns)
- Insurance policies (type, coverage, premiums)
- Expense patterns (categorized monthly expenses)
- Financial goals (retirement, home purchase, education funding, etc.)
- Risk tolerance assessments
- Income information

Assignment Requirements

Part 1: Model Development

1. Design and train a custom model to analyze financial data and generate personalized recommendations
2. Justify your choice of base model architecture and training approach
3. Implement feature engineering techniques specific to financial data



4. Document your training methodology, including how you handle financial domain-specific challenges

Part 2: Advisory System Implementation

1. Develop a system that takes a user's financial profile as input (investments, insurance, financial goals, expenses, etc.)
2. Generate actionable financial recommendations aligned with the user's financial goals
3. Provide explanations for recommendations (not just black-box advice)
4. Implement safeguards to ensure advice meets regulatory guidelines

Evaluation Criteria

Your submission will be evaluated based on:

1. **Precision of Advisory Output (50%)**
 - Accuracy of recommendations relative to financial goals
 - Appropriateness given the user's financial situation
 - Quality of explanation/justification for recommendations
 - Handling of edge cases and constraints
2. **System Performance (25%)**
 - Inference speed
 - Resource efficiency
 - Scalability potential
3. **Technical Approach (25%)**
 - Innovation in model selection and training methodology
 - Quality of feature engineering
 - Code quality and documentation
 - Testing methodology

Deliverables

1. Request and Response Validation: The code includes models and validation logic for validating incoming financial data (e.g., investments, income, expenses) and ensuring structured output for personalized recommendations.



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2. CI/CD Pipeline Setup: The repository contains configuration files and workflows for automated testing, Docker containerization, and deployment to Google Cloud using GitHub Actions, ensuring a streamlined deployment process.
3. Complete source code with documentation.
4. A report (max 3 pages) explaining:
 - Your model architecture choice and justification
 - Training methodology
 - Evaluation results
 - Challenges faced and solutions implemented
5. (optional) A 10-minute presentation demonstrating your system with sample user profiles

Please share your GitHub link for assignment review with support@networthtracker.in. We will respond back with a link to schedule a time for us to connect.

Thank you and all the best!