Online Course Review Analyzer & Recommendation Engine

Domain: EdTech / Learning Analytics

Problem Statement:

Design a system that scrapes online course platforms and builds a model to **predict course quality/success score** based on structured metadata (instructor, duration, rating, price, platform, etc.). Include a **GenAI-powered Learning Advisor** that recommends a personalized learning path based on the user's background and career goals.

🔑 **Key Components:**

- Scrape or collect structured data from sites like **ClassCentral**, **Udemy**, or **Coursera**

- Build a model to estimate the **rating/popularity/expected satisfaction**

- Create **user profiles** based on skill level, goals, availability

- Use GenAI to:

    o Suggest a **learning path** across courses/platforms

    o Personalize based on user's skill gaps, time, and domain interest

    o Example prompt:

"I'm a business graduate with no tech background. I want to become a Data Analyst in 3 months. I can spend 5 hours per week. Recommend a course plan using the scraped catalog."

Member 1: Data Collection & Feature Engineer

- Define schema: Course title, category, platform, price, instructor, rating, duration, skill tags

- Scrape data from:

    o **ClassCentral**, **Udemy** (via requests + BeautifulSoup)

- Preprocess: encode categorical data, normalize ratings/prices

- Optional: Enrich with skill tags or course-level difficulty tiers

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Member 2: ML Model Developer & Evaluator

- Define target: course rating, estimated satisfaction score, or popularity

- Train and tune models (e.g., regression, gradient boosting)

- Perform cross-validation, explain important features (e.g., via SHAP)

- Optional: build course-user compatibility score model

Member 3: GenAI Prompt Designer & Flask App Developer

- Design user profile input: goals, available hours, skills

- Prompt GPT-4 or Claude to suggest personalized learning sequences

  - Prompt example:

"Suggest a learning roadmap for a user wanting to become a full-stack web developer in 12 weeks, using the course catalog and their existing Python knowledge."

- Build Flask interface:

  - Select/upload user profile

  - Display: predicted top courses + GenAI-generated learning journey