AI Project Guidelines and Requirements

Overview

Students are required to work on an AI-powered application development project as part of their coursework. This project provides hands-on experience in applying AI concepts, tools, and technologies to real-world problems, promoting teamwork and technical proficiency.

Key Project Requirements

1. Team Formation:
- Students must form teams of up to 4 members maximum.
- Collaboration and equitable task distribution among team members are essential.

2. Project Scope:
- The team must build an AI-powered application that integrates AI models for specific functionalities.
- AI models can be accessed via APIs (e.g., OpenAI, Hugging Face, etc.) or by downloading pre-trained models.
- The application should address a practical problem or provide an innovative solution.

3. Database Integration (for IA&BD and CCV specializations only):
- The application must include a connection to:
  - A Vector Database (e.g., Pinecone, Weaviate) to store embeddings, or
  - A NoSQL Database (e.g., Neo4j) to implement a knowledge graph or similar architecture.

4. Presentation:
- Teams will pitch their project idea and present a Minimum Viable Product (MVP) at the end of the semester.

Lab Session Workflow

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You will have four lab sessions dedicated to the development of your project. Use these sessions wisely as outlined below:

Lab Session 1: Brainstorming and Design Thinking
- Define the problem, refine the solution, and plan the app's architecture.
- Create the schema and design of the app (e.g., database structure, AI functionalities).

Lab Session 2: Backend Development
- Develop the backend infrastructure of your app.
- Set up server-side logic and APIs to connect to AI models.
- Integrate the database for data storage and retrieval (if applicable).

Lab Session 3: Frontend Development
- Design and implement the user interface (UI) for the application.
- Focus on user experience and responsiveness.

Lab Session 4: Finalization and Integration
- Combine the backend and frontend into a cohesive application.
- Test and debug the app.
- Prepare a pitch summarizing the app's purpose, features, and technical implementation.

End-of-Semester Deliverables

At the end of the semester, each team must:

1. Present their solution:
- Deliver a pitch summarizing the problem, solution, app functionality, and technologies used.
- Include a demonstration of the MVP.

2. Submit final documentation:
- A report detailing problem definition, design and architecture, database and backend integration (if applicable), frontend development, challenges faced, and how they were addressed.

- Include code repositories and links to the live or locally deployable app.

Evaluation Criteria

Your project will be assessed based on the following:

1. Technical Implementation (40%): Quality of AI integration, database usage (if applicable), and overall app functionality.
2. Innovation and Creativity (20%): Novelty and relevance of the problem solved.
3. User Experience (20%): Quality of the app's UI/UX.
4. Teamwork and Documentation (10%): Collaboration and clarity of submitted materials.
5. Presentation and Pitch (10%): Effectiveness of the final pitch and demo.

Key Takeaways

This project is an opportunity to:

- Gain practical experience in AI-powered app development.
- Work with cutting-edge technologies such as Vector DBs, NoSQL databases, and AI model APIs.
- Learn teamwork, problem-solving, and project management skills.
- Showcase your creativity and technical skills through a functional app.

Take ownership of your learning journey, and have fun building something impactful!