Graph Neural Network (GNN) Task: Extending the FutureOfAIviaAI Repository

Objective

The primary objective of this task is to implement and evaluate a novel method using Graph Neural Networks (GNNs) or another approach learned in the course. You will enhance the functionality of the `FutureOfAIviaAI` repository while adhering to the constraint of not using solutions already present in the official implementation. The repository can be accessed here.

Milestones

To structure your work and ensure timely progress, I suggest the following milestones (optional):

Milestone 1: Understanding the Repository:

- Familiarize yourself with the `FutureOfAIviaAI` repository.
- Review the structure, existing methods, and datasets provided.

Milestone 2: Proposal Submission:

- Choose a GNN method (or another approach from the course) that is not currently implemented in the repository.
- Take notes to outline:
  - The method you plan to implement.
  - Why you chose this method.
  - Expected benefits and potential challenges.

Milestone 3: Implementation:

- Implement your chosen method within the repository framework.
- Ensure proper integration and code documentation.

Milestone 4: Evaluation:

- Evaluate your method using the datasets provided in the repository (or other suitable datasets).
- Compare the performance of your method with existing methods using appropriate metrics (e.g., AUC-ROC).

Milestone 5: Report Submission:

- Prepare the README.md:
  - The method implemented.
  - Implementation challenges and solutions.
  - Evaluation results and observations.
- Submit the modified repository folder, including the new implementation, scripts, and a README file.

Grading Criteria

Your work will be assessed based on the following criteria:

1. **Proposal (10%):**
   - Clarity and feasibility of the proposed method.
   - Relevance of the method to the task.
2. **Implementation (40%):**
   - Correctness and completeness of the implementation.
   - Code readability, organization, and documentation.
3. **Evaluation (30%):**
   - Appropriateness of evaluation metrics.
   - Depth of comparison with existing methods.
   - Quality of analysis and discussion of results.
4. **Report (20%):**
   - Clarity and conciseness of the report.
   - Explanation of challenges and solutions.
   - Presentation of evaluation results and insights.

Submission Instructions

- Submit your modified repository folder as a ZIP file, including:
  - The new method implementation.
  - Scripts used for evaluation.
  - A README file explaining your implementation and how to run the code.
  - If you think that your work is valuable enough, I highly encourage you to make a pull request to the original repo.
- Deadline: 12:00 PM on the 16th of December.

- Live grading sessions will be held on the 16th, 17th, and 18th of December, according to the timetable. The timetable can be accessed here.
- During live grading, you will:
  - Explain your milestones and solutions.
  - Defend your reasoning, results, and their validity and importance.