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CS461

Using agentic workflows to build AI-integrated assignments for introductory psychology

Abstract:

Our application allows students to have a personalized and interactive learning experience. In general, one of the best learning opportunities comes from being able to talk directly with an expert. Some students can find a tutor who is able to ask the student conceptual questions and provide feedback to the students' response. Other students may not be fortunate enough to have a tutor and rely on asking questions to the teacher during class. It is obvious that the faculty and students don't have the time to work together individually until the student understands the topic. This leaves many students behind. Importantly, while they may pass the class, the student will forget the course topics the day after the final.

With revolutionary advancements in AI, our application will fix these problems. By uploading the course textbook section to the application, teachers can effortlessly create interactive assignments for their students. The chatbot will prompt the student with questions and rate their understanding of the topic. If the agent believes the student doesn't have a complete understanding, then it will provide information about the topic and re-prompt with another question. This framework allows the student to communicate with an expert as the chatbot has access to the textbook information.

The application will be demonstrated to an introductory level phycology class in the Winter term of this year. We will be collecting data on the interaction the students have with our chatbot and how well they perform on quizzes on the topic. If the application is successful, we plan to go beyond the project description and build it to allow any information to be loaded into it so that a teacher or student can build their own interactive learning environment.

Activity:

As a team we brainstormed features we could implement after the base project is completed. This think-ahead brought up many important ideas on how to design the application. We want the application to be customizable to allow for these additional features.