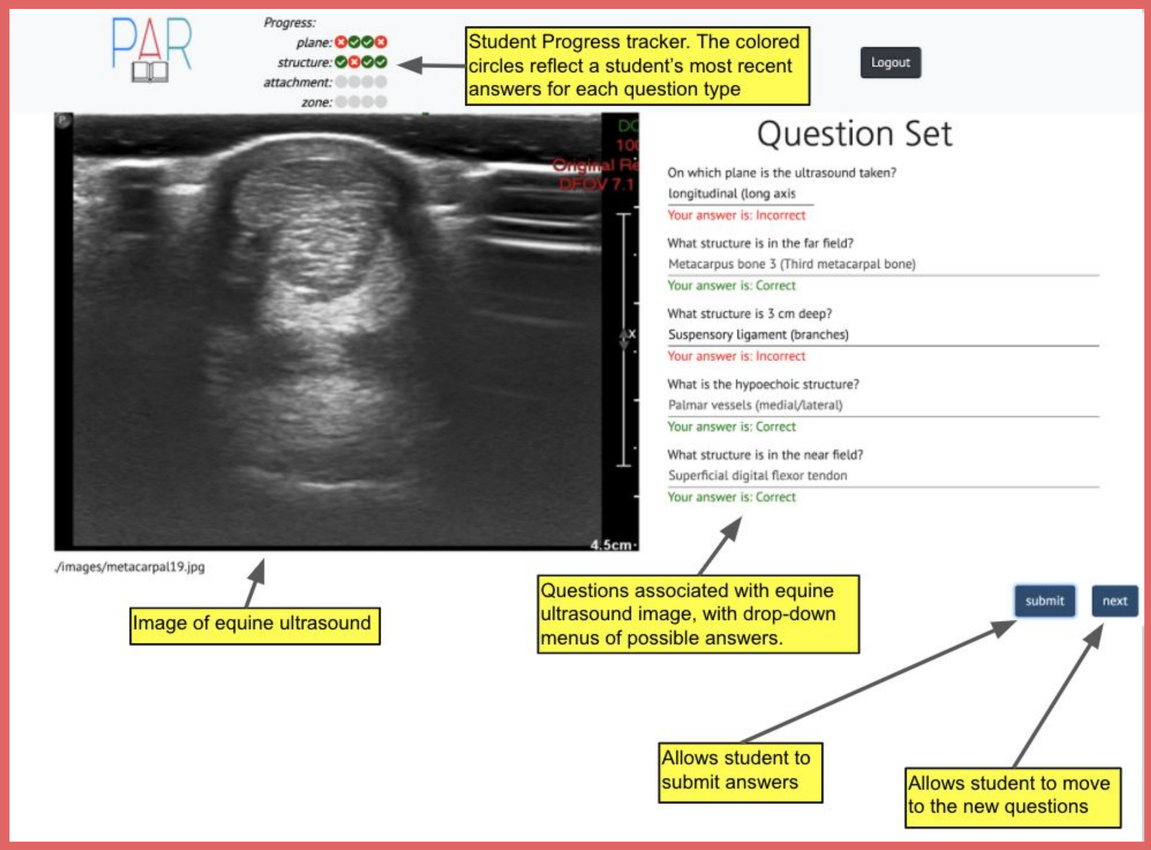
Practice, Assessment, and Review: The Pedagogical Model Behind an Intelligent Tutoring System

Kerry Buckman, Department of Computer Science, Ithaca College, Ithaca NY
Advisor: Toby Dragon
This research is sponsored by Ithaca College and the State University of New York Innovative Instruction Technology Grant (IITG) program

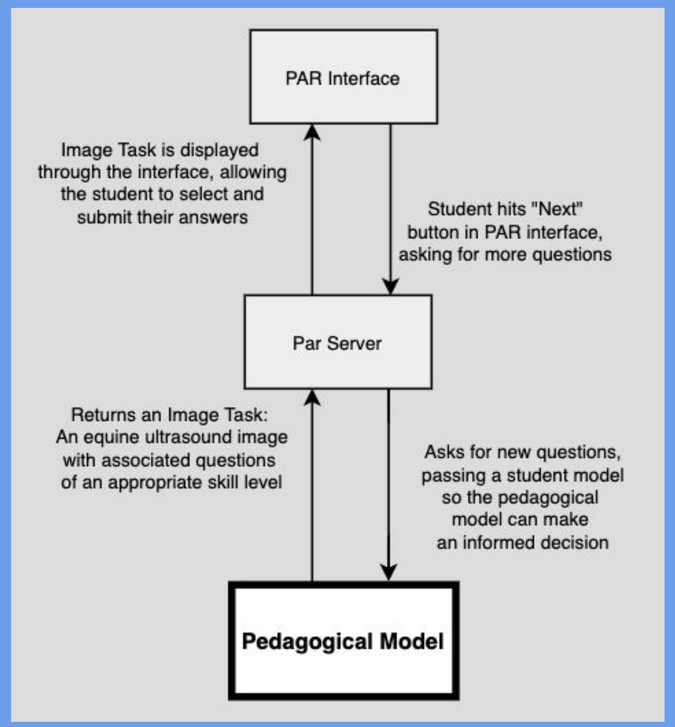
PAR's Interface

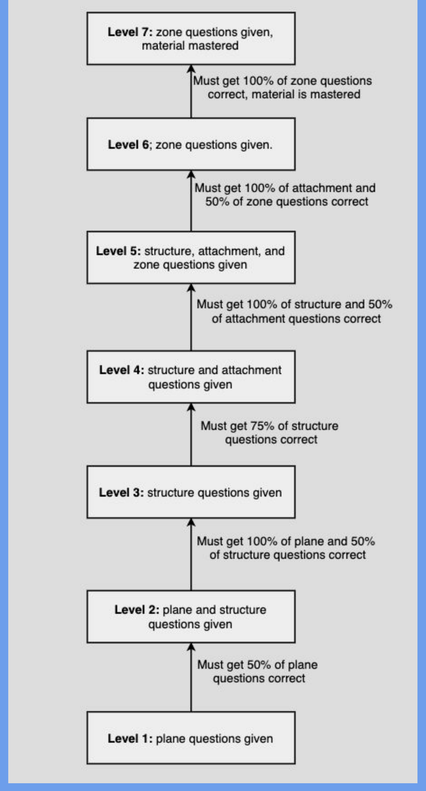


How the Pedagogical Model makes Informed Decisions

- The purpose of the pedagogical model is to select appropriate questions for a student's knowledge level, maximizing student learning. The PAR pedagogical model accomplishes this by:
  - Calculating a student's knowledge level by looking at recent answers for every kind of question.
  - Using that knowledge level to determine which kind of questions to give to a student.
  - Looking at a student model to select questions tthat have been seen the least by the student. This helps to prevent memorization
  - Recalculating the knowledge level every time answers are submitted, to ensure the most accurate representation of the student's knowledge.

The Pedagogical Model and Its relation to the PAR System





- **PAR interface:** how the user interacts (answers questions) with the system.
- **PAR Server:** contains all student models and acts as the connection between the interface and the rest of the system.
- **Pedagogical model:** responsible for making informed decisions to give a student appropriate questions for theor level of knowledge.
- **Student level:** determined on how well they've done on recent questions of each type. If a student no longer meets the qualifications for a level, they will drop to a lower one,

Future Study on the PAR System

- This spring, the larger project team will pilot the PAR system in courses
- We will conduct a study regarding the effectiveness of the system, including the pedagogical model.
- Participants will evaluate the speed at which PAR is presenting new kinds of questions and the appropriateness of their difficulty levels through agreeing or disagreeing with a series of statements.