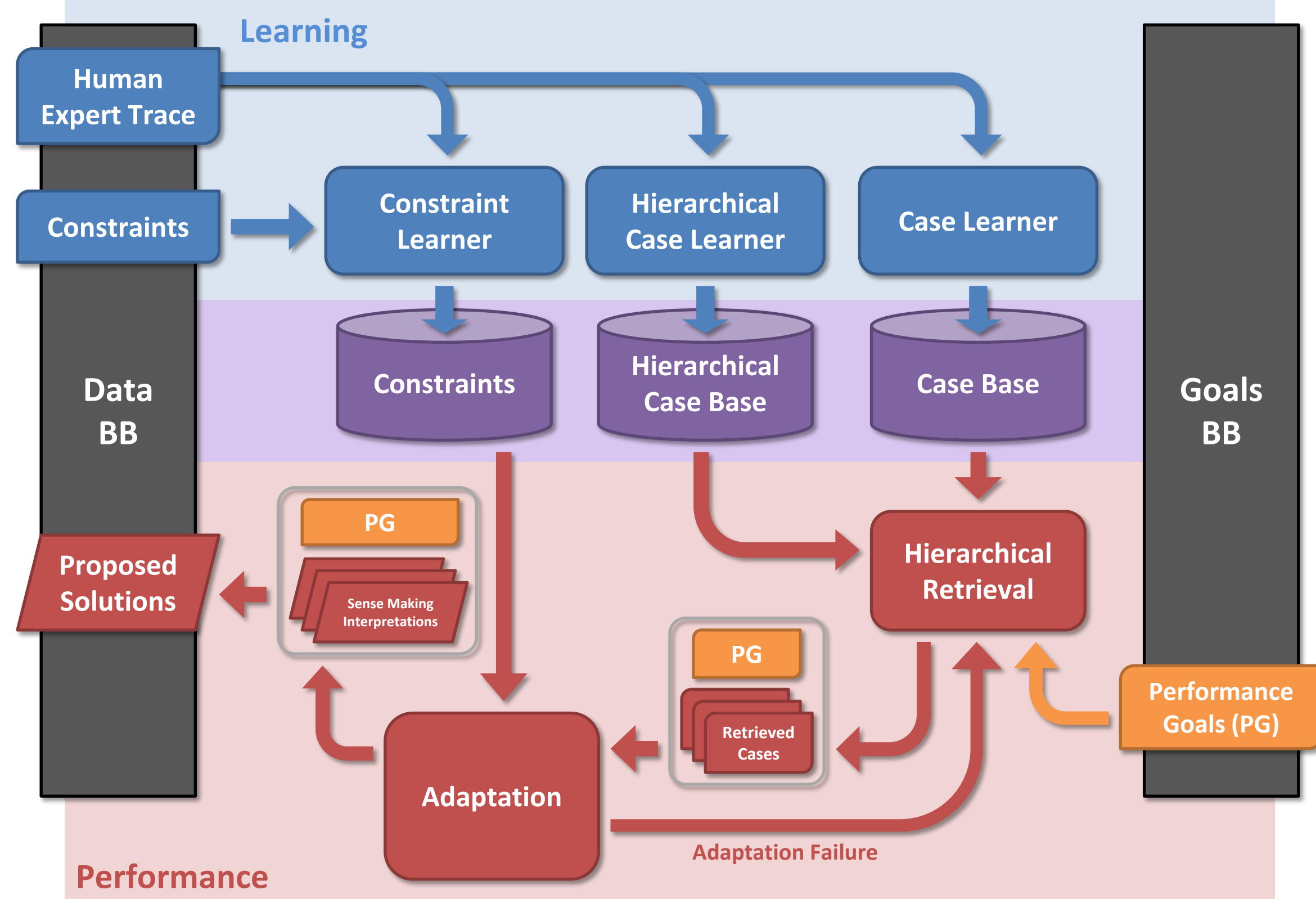


Lead Investigator
Elizabeth T. Whitaker, Ph.D.

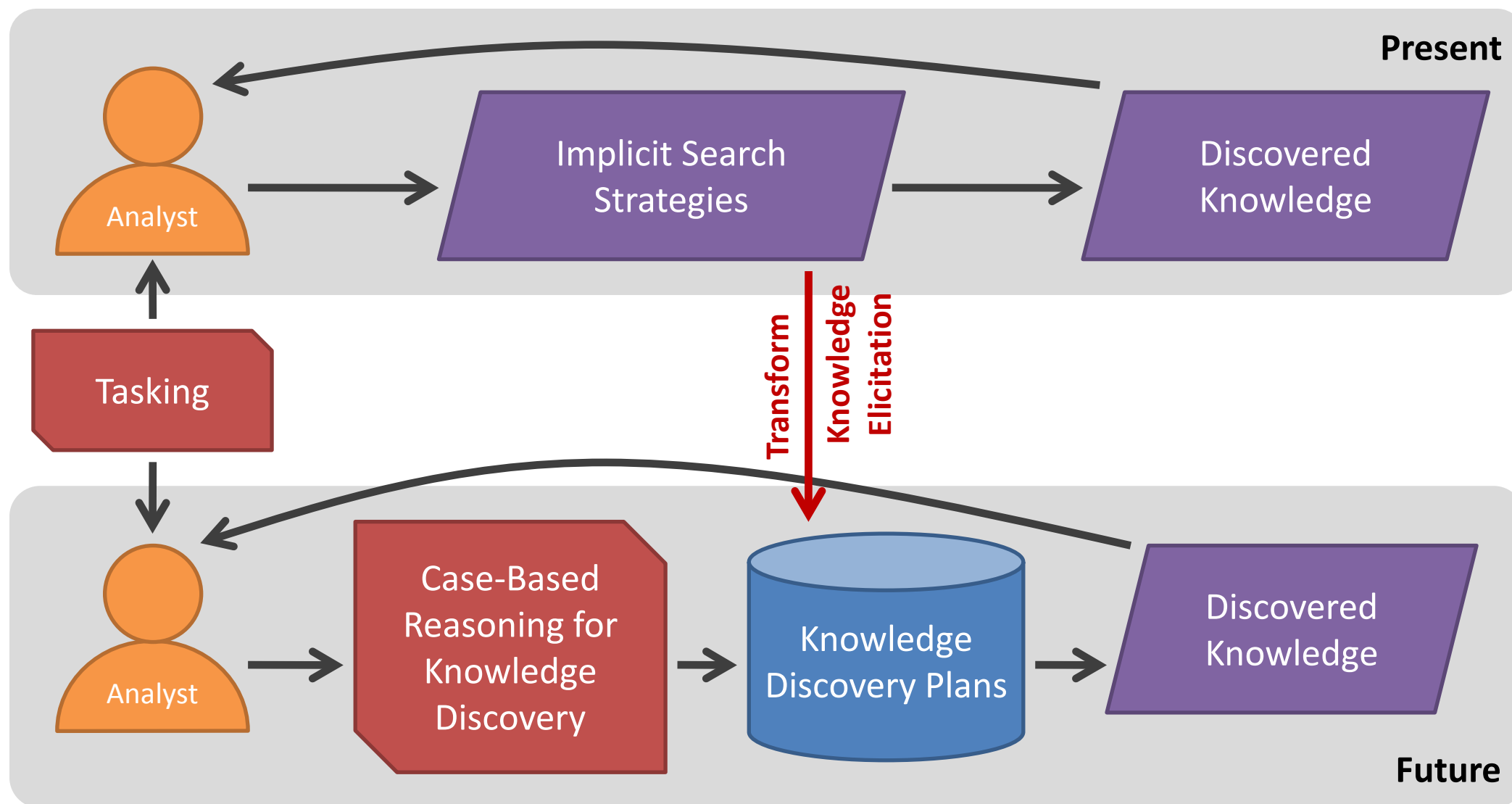
With
Christopher Hale, Ph.D.

Qualifications and Capabilities



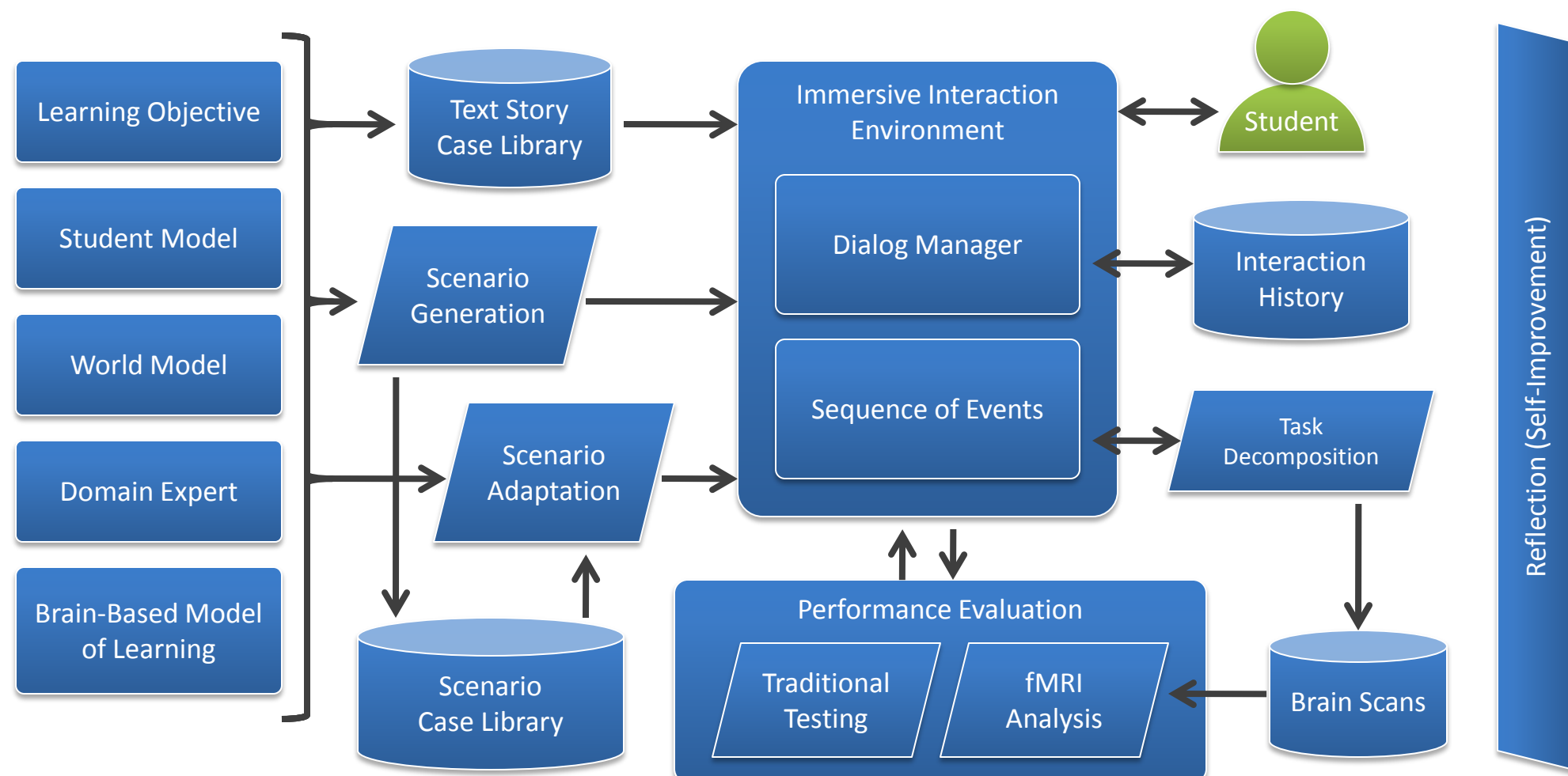
DARPA Integrated Learning Project

GTRI collaborated with a large team of researchers on the DARPA Integrated Learning project, which had as its goal to research the integration of multiple machine learning paradigms to learn to solve a problem by observing an expert in a single problem-solving session. GTRI, collaborating with the Georgia Tech College of Computing, developed a case-based learner & reasoner to perform as part of the integrated learning activity.



Case-based Reasoning for Knowledge Discovery

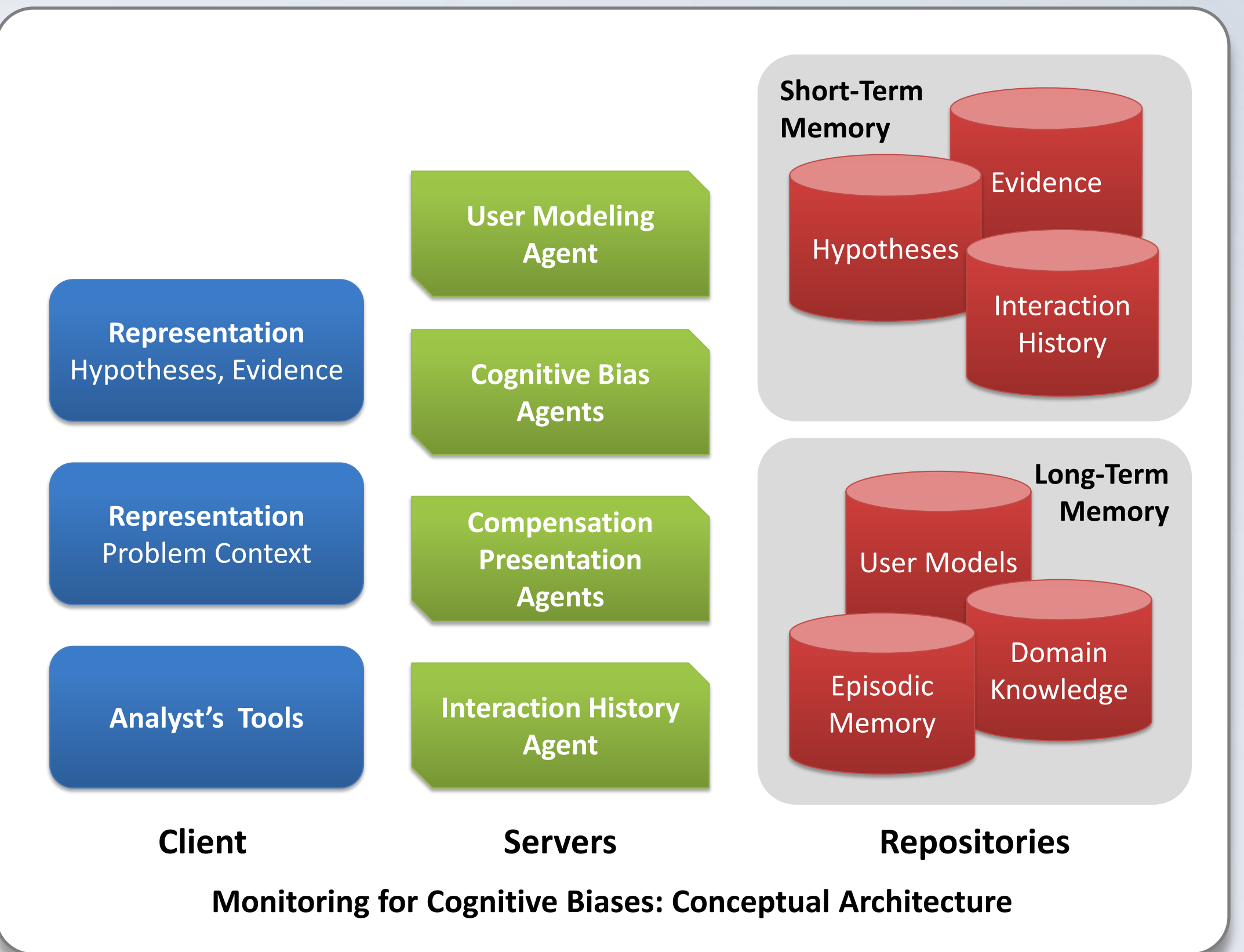
GTRI investigated analytic strategies used in the process of discovering new knowledge, as part of the ARDA/DTO Novel Intelligence from Massive Data (NIMD) program. We designed and prototyped a software tool for intelligence analysts that uses case-based reasoning and case-based planning to plan and execute complex interdependent Internet searches to aid analysts in discovering information relevant to a tasking. Our case-based reasoning approach represents best-practice analytic strategies in the form of domain specific search plans which are stored in a case library. The prototype matches an analyst's current problem with the most similar problem in the case library and adapts the associated search plan to solve the current problem.



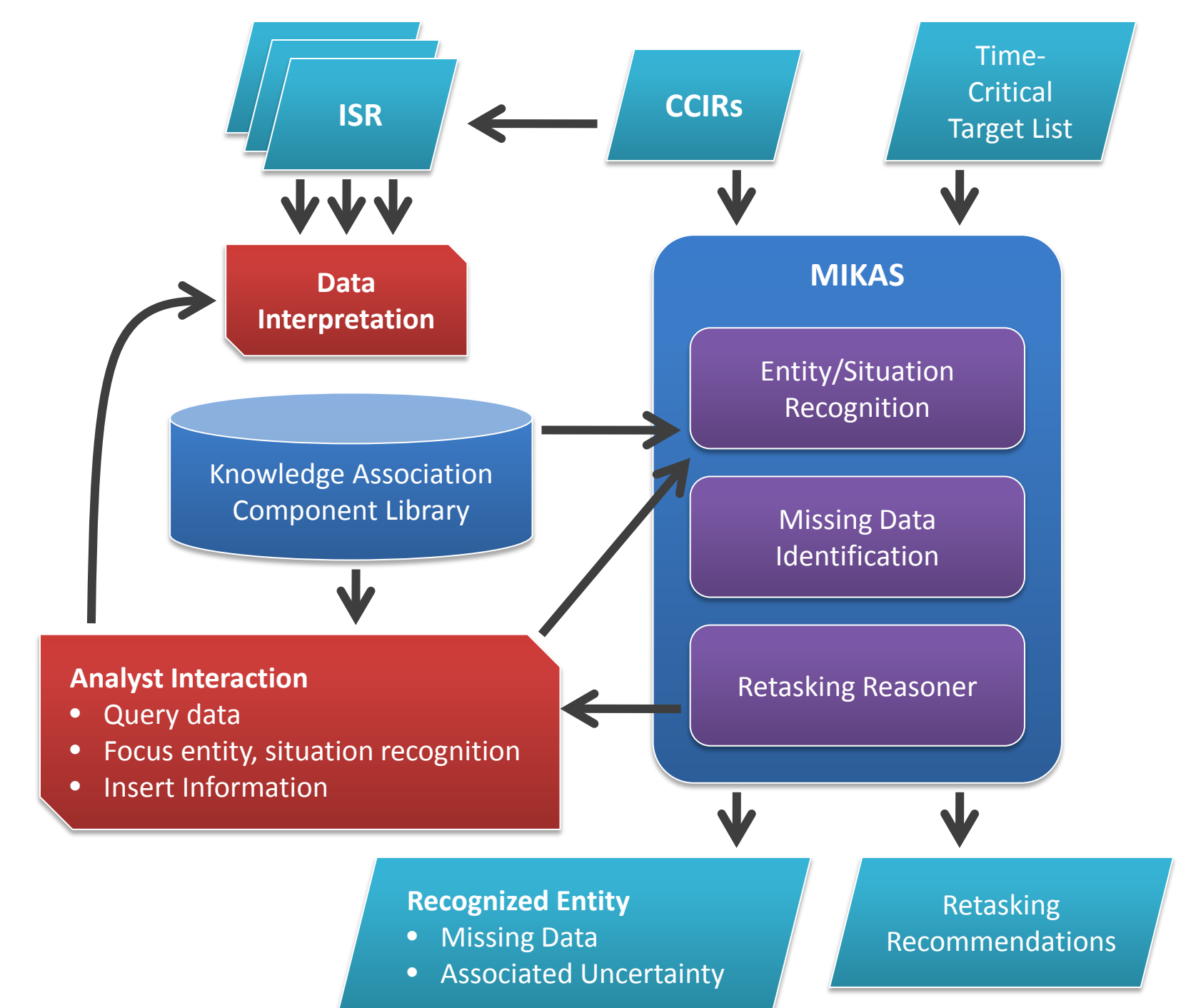
Brain-Based Cognitive Architecture for Training (BBCAT)

- An architecture based on neuro-scientific models of student reasoning, learning, and emotion.
- Integrate lessons from brain-based models of human learning and reasoning with student modeling, teaching and learning theories, and scenario generation
- Design of a system that can:
 - Assess an individual's learning and emotion
 - Dynamically adapt training activities to increase training effectiveness

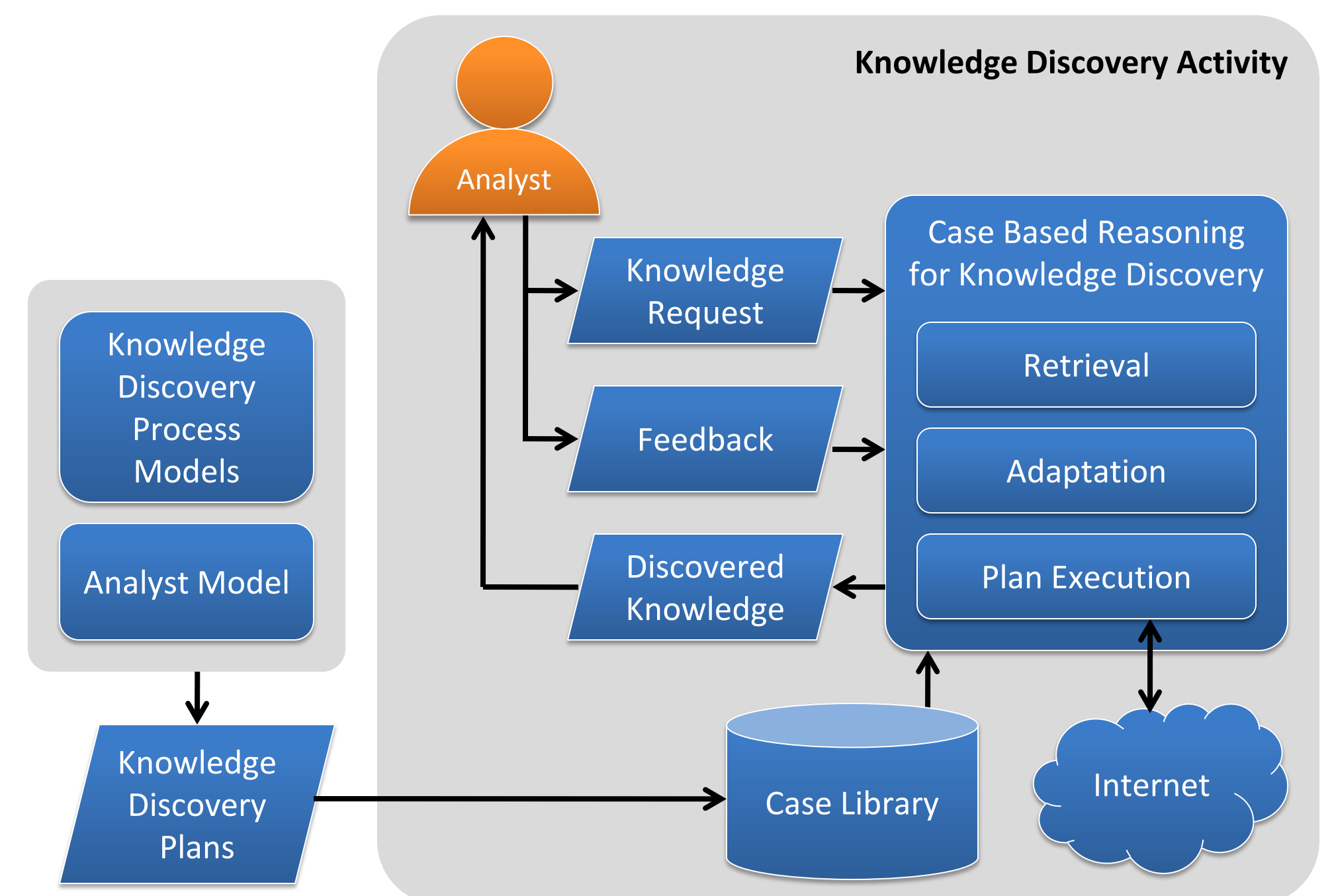
Research Areas of Interest



Monitoring for Cognitive Biases: Conceptual Architecture



Multi-Intelligence Knowledge Association System



Case-Based Reasoning for Knowledge Discovery (CBR for KD) Capabilities Cases

- Does the organization possess the technical capabilities?
- Does the organization have access to the raw materials?
- What manufacturing resources are available?
- Who are the experts in this area?
- Who have the experts collaborated with and what are their capabilities?
- What publications and education exist in this area?

The GTRI team will supply intelligent training, cognitive models of learning, knowledge-based reasoning, behavioral modeling and machine learning to a team with a gaming framework.

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