Retrieval Confirmation based Brain Scans

The GTRI team will provide modeling and reasoning approaches, a personal sensor suite, task analysis approaches. We are looking for intelligence analyst evaluation and requirements.

The GTRI team was part of a larger project team and contributed component models and neuroscience domain knowledge from the School of Psychology.

Sensor Suite: Physiological Monitoring System
GTRI has several sensors groups. One of them working with the Army to develop a suite of sensors that can be used to monitor the state of a soldier: heart rate, acceleration, galvanic skin response and skin temperature. GTRI has access to a large variety of sensors that can be explored for the MOSAIC project. These will be combined with GTRI’s cognitive reasoning approaches and cognitive psychology task analysis for MOSAIC.

Brain-Based Cognitive Architecture for Training (BBCAT)
BBCAT is an architecture based on neuro-scientific models of student reasoning, learning, and emotion. It integrates lessons from brain-based models of human learning and reasoning with student modeling, teaching and learning theories, and scenario generation. The design of BBCAT can:

- Assess an individual’s learning and emotion
- Dynamically adapt training activities to increase training effectiveness

Layers in Human Social Cultural and Behavioral Modeling
For the ONR HSBC program GTRI combined several modeling approaches and included effects of policies on behavior.

ONR Human Social Cultural Behavioral Models
GTRI developed techniques to compose and dock models of human behavior to enable more effective modeling of terrorist recruitment. These approaches included individual, organizational and societal levels of modeling.

DARPA Narrative Networks
Our team is using fMRI analysis to explore human responses to narratives with particular characteristics. We designed a narrative composition prototype using case-based reasoning, learning and planning augmented by heuristics to provide domain knowledge, constraints and adaptation capabilities.

Brain-Based Model
Learning Objective
Offline Activity
Case Studies

Layers in Human Social Cultural and Behavioral Modeling

Brain-Based Cognitive Architecture for Training (BBCAT)

IARPA SIRIUS
GTRI collaborated with Applied Research Associates on the Heuristica serious game, which was a research project aimed at training users to recognize and avoid their cognitive biases when performing analytical decision making tasks. GTRI supplied a student model and content selector capabilities to personalize and adapt gameplay and maximize the learning potential of each student.

IARPA ICARUS
The objective of the ICARUS Program is to construct brain-based computational models of the process known as sensemaking. Sensemaking, a core human cognitive ability, underlies intelligence analysts’ ability to recognize and explain relationships among sparse and ambiguous data. The GTRI team was part of a larger project team and contributed component models and neuroscience domain knowledge from the School of Psychology.

Georgia Tech Research Institute
Research Areas of Interest

Qualifications and Capabilities

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