



DISSERTATION DEFENSE



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Cognitive Modeling of Aggregate and Individual Performance on the Remote Associates Test

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10:00am – 12:00pm

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Hybrid – [Zoom](#) Passcode:jule

ABSTRACT: The Remote Associates Test (RAT) is a context-dependent retrieval task, which consists of a series of problems, each with three seemingly unrelated prompt words. The participant is asked to generate a single word answer that is related to all prompt words. This work presents multiple computational models of humans solving the RAT and investigates how prior knowledge, retrieval mechanisms, and word preference strategies influence the model's ability to match human behavior. I find that a cognitive model with long-term memory spreading activation through word-association strengths matches aggregate human problem difficulty, with the best model achieving an R2 of 0.98 and mean-squared error of 0.29. This includes examining factors such as noise and base-level activation for memory retrieval. I also find that when looking at the intermediate processing of individual participants, there is no strong evidence that people systematically attend to a particular prompt word based on position, word frequency, or fan.

CHAIR: Prof. John E. Laird