

Knowing the World, Neglected Literature and the Foresight of James Allen

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James Allen teaches us that the job of natural language is to represent the world and to facilitate collaborative problem solving. This talk is about the roles of natural language in collaborative problem solving when at least one partner is a computer. We'll dig into examples from two recent DARPA programs, and we'll see that often, the research challenges and their solutions were anticipated by James, sometimes years earlier. One particular challenge motivates the talk: There is a vast literature of neglected documents that individually say little but collectively fill in details of how the world works. Humans lack the time and patience to read thousands of minor results. Machines can process enormous numbers of texts, but to make the effort worthwhile we must consider two questions: How much semantic depth is needed to solve particular problems, and how can knowledge that is expressed in natural language be put into a form that supports inference and problem solving.