

From Textual Entailment to Knowledgeable Machines

Peter Clark

Allen Institute for Artificial Intelligence

Project Halo is a long-term endeavor to create "knowledgeable machines", systems containing large amounts of general and domain-specific knowledge in a computable form. As a medium-term target, our goal is to have the computer pass an elementary school science exam as written, and our approach heavily leverages textual entailment technology. Frequently, exam questions can be transformed into entailment problems in which the entailment is from texts (e.g., school textbooks) presenting the relevant general and scientific knowledge, and the entailment transformations include rules, also derived from texts, that encode appropriate scientific and general inferences. In this talk I will overview the project and describe the textual question-answering component in detail. I will also discuss how the semi-formal representations of text, generate on the fly for textual entailment decisions, might also be aggregated together into a persistent knowledge base – a small step from entailment technology towards the ultimate goal of knowledgeable machines.