

Artificial Intelligence Programming

Ontologies

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16-2: Knowledge Engineering

- Logic provides one answer to the question of *how* to say things.
- It does not tell us *what* to say.
- Typically, this is the hard part.
- We want to give our agent enough knowledge to solve all of the problems we are interested in.
- The process of building a knowledge base is referred to as *knowledge engineering*
 - Many of the same principles as software engineering.

16-3: Knowledge Engineering

- The knowledge engineering process typically consists of the following steps.
 1. Determine the queries and types of facts that are available/allowed
 - For example, will the agent need to select actions or make conclusions, or just answer questions from a human user?
 - Will we ask existential queries, or just universal queries?
 2. Gather the relevant knowledge
 - Interview experts and find out how the domain works.
 3. Select a vocabulary of classes, functions, predicates and constants
 - This vocabulary is called an *ontology*
 4. Encode general knowledge about the domain
 - Formally represent the knowledge gathered in step 2.
 - This may require revisiting step 3.
 5. Encode specific queries or problems to be solved.
 - This may require returning to steps 2 and 3.