

Ontologies for Robotic Agents

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Market requires many robots in many environments performing many tasks







Why Is Knowledge so Important?

the cost of not knowing

• if the robot does not know about the task, the environment, the robot the programmer has to hardcode everything



- programming/instructing at an abstract/semantic level
 - put the bolt into the nut and fasten it
 - pour water into the glass
 - ...

Wikipedia: Screw





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A task ontology





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A task ontology



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Knowledge Types



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KnowRob Components





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Computing relations using procedural attachments

- Compute symbolic knowledge on demand from datastructures that already exist on the robot by attaching procedures to semantic classes and properties
- Re-use existing information & make sure abstract knowledge is grounded





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Infer storage location based on generic class knowledge



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