

CS 8520: Artificial Intelligence

Knowledge Representation

Paula Matuszek
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KR Introduction

- General problem in Computer Science
- Solutions = Data Structures
 - words
 - arrays
 - records
 - list
- More specific problem in AI
- Solutions = knowledge structures
 - lists
 - trees
 - procedural representations
 - logic and predicate calculus
 - rules
 - semantic nets and frames
 - scripts

Kinds of Knowledge

Things we need to talk about and reason about; what do we know?

- Objects
 - Descriptions
 - Classifications
- Events
 - Time sequence
 - Cause and effect
- Relationships
 - Among objects
 - Between objects and events
- Meta-knowledge

Distinguish between knowledge and its representation

- Mappings are not one-to-one
- Never get it complete or exactly right