

Knowledge Representation and Ontologies

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Overview of the Course

- 1 Modeling information through ontologies
 - 1 Introduction to ontologies
 - 2 Ontology languages
 - 3 UML class diagrams as FOL ontologies
- 2 Using logic for knowledge representation
 - 1 Main components of a logic
 - 2 Reasoning methods in logics
 - 3 Exercises on analyzing logics
- 3 Description Logics
 - 1 Introduction to DLs
 - 2 Reasoning in simple DLs
 - 3 More expressive DLs
 - 4 Fuzzy DLs
 - 5 Ontology modularization, integration, and contextualization
- 4 Ontology based data access
 - 1 Description Logics for data access
 - 2 Query answering over databases and ontologies
 - 3 Linking ontologies to relational data
 - 4 Reasoning in the *DL-Lite* family
- 5 Conclusions and references

