

Ontologies

EEL 5937 Multi Agent Systems
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Ontologies

- **Ontologies are explicit formal specifications of the terms in the domain and relations among them (Gruber 1993).**
- **Why would someone want to develop an ontology? Some of the reasons are:**
 - **To share common understanding of the structure of information among people or software agents**
 - **To enable reuse of domain knowledge**
 - **To make domain assumptions explicit**
 - **To separate domain knowledge from the operational knowledge**
 - **To analyze domain knowledge**

What is an ontology?

- **Classes** (sometimes called concepts)
 - **Slots** (sometimes called roles or properties)
 - **Facets**, restrictions on slots (sometimes called role restrictions).
 - An ontology together with a set of individual instances of classes constitutes a **knowledge base**.
 - In reality, there is a fine line where the ontology ends and the knowledge base begins.
- This representation is closely related to the frame approach of Marvin Minsky (1975).
- They are also closely related to semantic networks
- Also related to: OOP, Database systems etc.
- There can be variations from this basic pattern