

Modeling Error Explanation

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1 Explanation Algorithms

1. Consider ontology $\mathcal{K} = (\{\alpha_1, \alpha_2, \alpha_3, \alpha_4\}, \emptyset)$:

$$\begin{aligned}\alpha_1 & : B \sqsubseteq \forall R^- \cdot \neg A, \\ \alpha_2 & : A \sqsubseteq \forall R \cdot \neg B, \\ \alpha_3 & : C \sqsubseteq A \sqcap \exists R \cdot B. \\ \alpha_4 & : D \sqsubseteq C\end{aligned}$$

Find a single MUPS for concept C . How many applications of tableau algorithm were necessary ?

2. Based on the previous point, find all MUPSES for C . How many applications of tableau algorithm were necessary in this case ?

2 Modeling Error Explanations Practically

1. Download and set up the Pellet system (see previous seminar).
2. Download the Pizza ontology.
3. Find all explanations for unsatisfiability of `IceCream` using Pellet system (command `explain`).
4. Explaining can be used not only for unsatisfiability, or consistency, but for any entailment. Try to explain selected axioms in the class hierarchy according to your choice (Pellet switch `--hierarchy`)