Fuzzy Description Logics

Challenging Exercise 1

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Consider a concept name A and $q \in (0, 1)$.

Build a Gödel $\mathcal{ALC}$ ontology $\mathcal{O}$ such that for every model $\mathcal{I}$ of $\mathcal{O}$ and every $x \in \Delta^{\mathcal{I}}$,

$$A^{\mathcal{I}}(x) = q$$

or show that no such ontology exists.

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