

Towards Visual Decision Support in Interactive Repair

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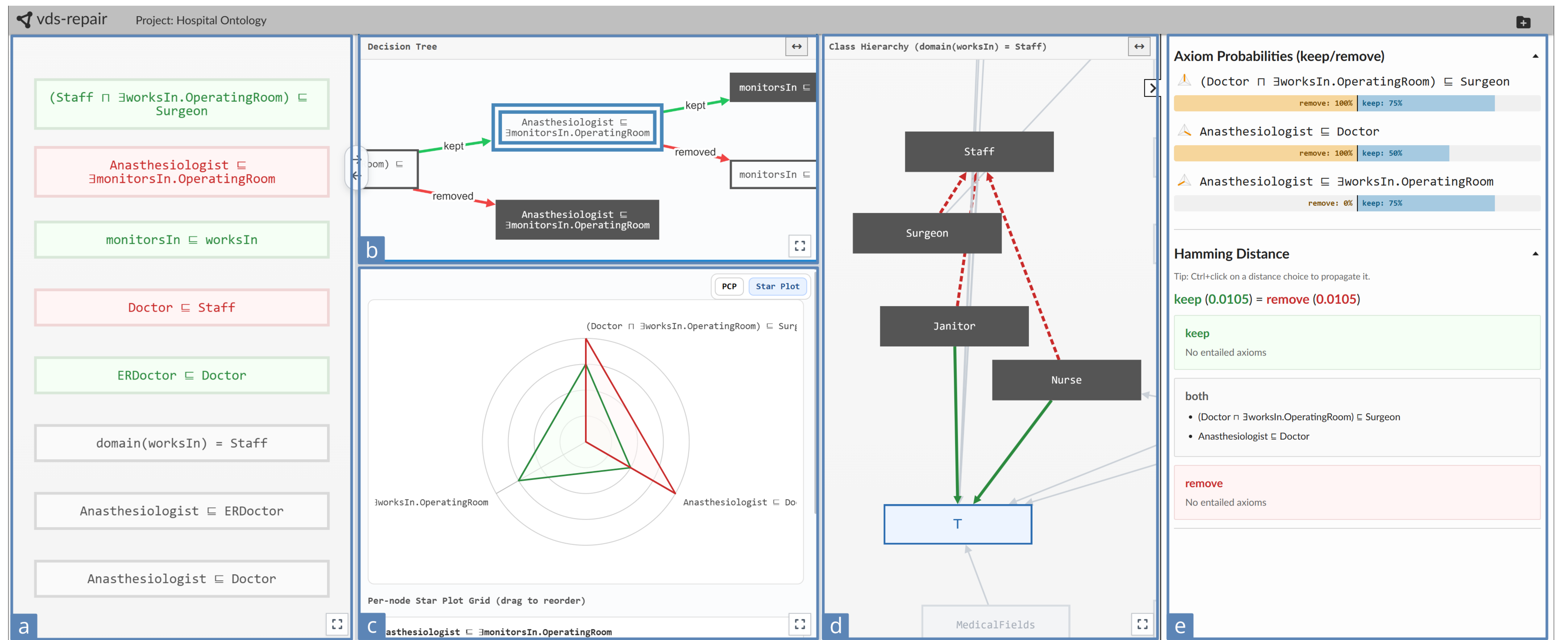
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Motivation and Contribution

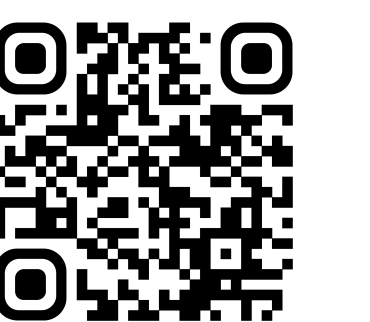
Problem. Ontology repair often admits many possible repairs, and the correct choice depends on domain knowledge that may not be evident from the semantics of individual axioms alone.

Contribution. We introduce an interactive repair approach that guides users through the exponential repair space while minimizing the required decisions, and supports users in cases of uncertainty through *decision-support features* based on important entailments, distances to reachable repairs, and structural differences in the class hierarchy.

Web-based Prototype



- a) The *process view* shows the axioms for which the user must make a decision (green = **kept**, red = **removed**, gray = **undecided**).
b) The *decision tree* explicitly shows the possible repair paths depending on the binary decisions for each axiom.
c) The *starplot* compares the preservation rates of important entailments.
d) The *diff view* shows the effect of the user's decision on the class hierarchy, where **removed relations** are denoted in red and **new ones** in green.
e) The *interactive panel* shows, for each option (keeping or removing an axiom) the rates of important entailments and the Hamming distance from the current state to the best reachable repair.



Interactive Repair with Decision Support

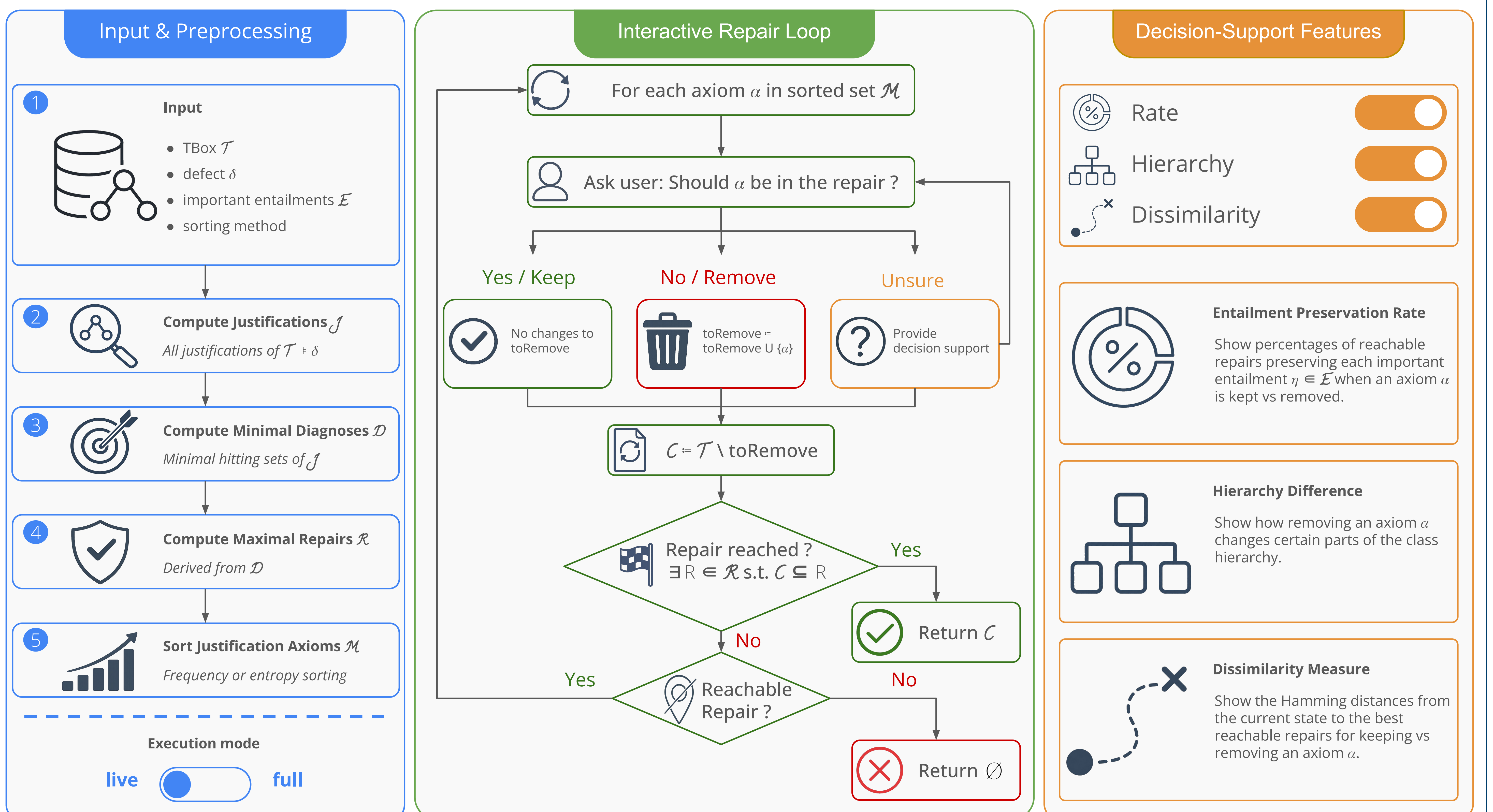


Figure: Overview of the TBox repair approach, highlighting the background preprocessing of the input, which enables the various decision-support features incorporated into the interactive repair loop.