Conceptual Pathway Querying of Natural Logic Knowledge Bases from Text Bases

We describe a framework affording computation of conceptual pathways between a pair of terms presented as a query to a text database. In this framework, information is extracted from text sentences and becomes represented in natural logic, which is a form of logic coming much closer to natural language than predicate logic. Natural logic accommodates a variety of scientific parlance, ontologies and domain models. It also supports a semantic net or graph view of the knowledge base. This admits computation of relationships between concepts simultaneously through pathfinding in the knowledge base graph and deductive inference with the stored assertions. We envisage use of the developed pathway functionality, e.g., within bio-, pharma-, and medical sciences for calculating bio-pathways and causal chains.

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