Information Sciences - Applications

Volume 3, Issue 2, March 1995, Pages 127-147

A visual debugger for pure Prolog

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https://doi.org/10.1016/1069-0115(94)00048-7

Abstract

This work involves the design and coding of an interpreter for pure Prolog and building a visual debugger for it. Most of the available Prolog interpreters contain some tracing facilities. They do not incorporate, however, a comprehensive visual debugger. The interpreter performs the operations of parsing, unification, resolution, and search in a state-space representation of the Prolog program. The visual debugger incorporates the graphical visualization and the manipulation of the SLD resolution tree. The user visualizes the execution of a pure Prolog program and interacts with the program inside a windowing environment. The program execution may be viewed without interruption or the execution can be stopped at any moment in time. At this point the â€œsnapshotâ€ can be scrutinized with the help of break-points and data displays. This software aims itself to those who wish to observe the actual process of predicate unification, substitution, resolution and goal matching in a Prolog program and to visually interact with the interpreter using a highly friendly and pleasing user interface. An advanced feature, referred to as debugging on the tree, provides the user with the ability to insert break-points directly on the SLD tree, to choose the path of execution, and

change the search mode. The resultant search algorithm can be a mixture of depth-first and breadth-first search, avoiding infinite search paths.

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