



PowerLoom® Knowledge Representation & Reasoning System

- [Overview](#)
- [Features](#)
- [Documentation](#)
- [Download](#)
- [Contributions](#)
- [Ontosaurus](#)
- [PowerLoom GUI](#)
- [Publications](#)
- [Mailing lists](#)

[Latest versions:](#)

- Latest PowerLoom snapshot: [2014-May-01]
- PowerLoom 4.0 beta: [2010-Oct-18]

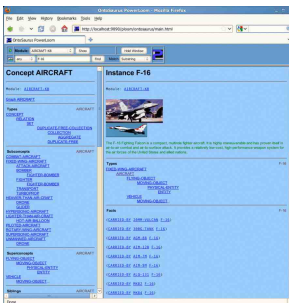
Overview

PowerLoom® is the successor to the [Loom®](#) knowledge representation system. It provides a language and environment for constructing intelligent, knowledge-based applications. PowerLoom uses a fully expressive, logic-based representation language (a variant of KIF). It uses a natural deduction inference engine that combines forward and backward chaining to derive what logically follows from the facts and rules asserted in the knowledge base. While PowerLoom is not a description logic, it does have a description classifier which uses technology derived from the Loom classifier to classify descriptions expressed in full first order predicate calculus ([see paper](#)). PowerLoom uses modules as a structuring device for knowledge bases, and ultra-lightweight worlds to support hypothetical reasoning.

To implement PowerLoom we developed a new programming language called [STELLA](#), which is a Strongly Typed, Lisp-like LANGUAGE that can be translated into Lisp, C++ and Java. PowerLoom is written in STELLA and therefore available in Common-Lisp, C++ and Java versions.

PowerLoom is being developed at the [Intelligent Systems Division](#) of [USC's Information Sciences Institute \(ISI\)](#).

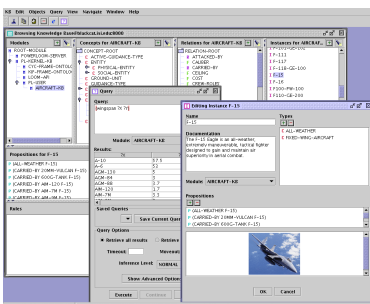
Ontosaurus



Ontosaurus is a Web-based browser for PowerLoom knowledge bases. It is now standardly included with PowerLoom starting with version 4.0.

The PowerLoom version of Ontosaurus was derived from the Loom version but has been reimplemented in STELLA for easier integration with PowerLoom. It requires a PowerLoom HTTP server which is currently available for Java and certain Lisp versions that support a Web server (e.g., Allegro CL).

PowerLoom GUI



The PowerLoom GUI (or knowledge editor) is a Java-based graphical client for PowerLoom. The GUI is now standardly included with PowerLoom starting with version 4.0.

The GUI is implemented as a Swing-based Java application which communicates with an embedded or remote PowerLoom server using a SOAP communication layer over HTTP. Similar to Ontosaurus, it requires a PowerLoom HTTP server

which is currently available for Java and certain Lisp versions that support a Web server (e.g., Allegro CL).



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