

Netweaver

Model Uses	The R Statistical Package can be used for statistical analysis, simulation modeling and advanced data analysis.	
Major Categories	Decision Support	<u>Subject Knowledge Level</u> Intermediate
Minor Categories	Ecological Risk Assessment; Decision Support	<u>Technical Difficulty Level</u> Intermediate
Model Type	Semi	<u>Geographic in Nature?</u> Yes

Abstract

NetWeaver is a knowledge base construction, maintenance, documentation, and debugging tool written at Penn State University to provide an efficient knowledge engineering environment for knowledge based systems development. Just as database management systems provide the ability to manipulate data, and management information systems assist in the organization and retrieval of information, NetWeaver provides the ability to create, manipulate, test, and debug heuristics (i.e. decision models).

NetWeaver is invaluable in the development of applications that are based on rare or specialized expertise, modeling complex systems that are resistant to precise quantification, and for developing applications that not only give partial results given insufficient data but provide guidance in the relative importance of those data that are absent or incomplete.

NetWeaver renders knowledge dependency networks with a fully editable graphic representation so that the networks appear just like they would on the white board. This greatly facilitates the knowledge engineering process as it permits the inclusion of domain expert(s) in the knowledge representation process and hence encourages greater participation in the design of the final knowledge base product.

Networks can be evaluated in real-time with nodes changing color to indicate their changing true-ness levels. This ability to peer into the logical workings of a knowledge network greatly optimizes the knowledging engineering process by 1) providing the ability to run and evaluate freshly elicited knowledge in the presence of the domain expert, 2) providing the ability to trace the logic structure from data to conclusions, and 3) allowing the knowledge engineer to quickly identify and edit errors and inconsistencies in the logic.

As a knowledge engineering tool, NetWeaver offers many advantages over traditional knowledge based system development shells. Performance is extremely efficient. NetWeaver provides real support for the knowledge elicitation, representation, and verification phases of decision model development, as well as guidance in optimizing the collection of data. Fuzzy logic is used to handle missing data, to evaluate between competing goals, and for the classical use of determining a variable's membership in a given class.

Future Developments

None noted

Model Limitations

None noted

Model Features

Unknown

Required Data Types

Expert knowledge of system is used to construct knowledge-base.

Model Outputs

Truth values regarding knowledge base assertions.

Source

Rules of Thumb, inc.
PO Box 406
North East, PA 16428

Source (URL)

<http://www.rules-of-thumb.com/NetWeaver/>

Hardware Requirements

None noted.

	Supported Platforms		
DOS	<input type="checkbox"/>	UNIX	<input type="checkbox"/>

Software Requirements

Windows 95/98/2000/NT/XP

Windows	<input checked="" type="checkbox"/>	Macintosh	<input type="checkbox"/>
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Cost, Licensing and Availability

Regular license--\$500.

Free evaluation download available.

Freely available to Penn State University students.