Call for Papers

Special *ARTIFICIAL INTELLIGENCE* issue on **RELEVANCE**

Guest Editors: Russell Greiner, Devika Subramanian, Judea Pearl

With too little information, reasoning and learning systems cannot work effectively. Surprisingly, too much information can also cause the performance of these systems to degrade, in terms of both accuracy and efficiency. It is therefore important to determine what information must be preserved, i.e., what information is "relevant". There has been a recent flurry of interest in explicitly reasoning about relevance in a number of different disciplines, including the AI fields of knowledge representation, probabilistic reasoning, machine learning and neural computation, as well as communities that range from statistics and operations research to database and information retrieval to cognitive science. Members of these diverse communities met at the 1994 AAAI Fall Symposium on Relevance, to seek a better understanding of the various senses of the term "relevance", with a focus on finding techniques for improving the performance of embedded agents by ignoring or de-emphasizing irrelevant and superfluous information. Such techniques will clearly be of increasing importance as knowledge bases, and learning systems, become more comprehensive to accommodate real-world applications.

To help consolidate leading research on relevance, the *Artificial Intelligence* journal is devoting a special issue to this topic. We are now seeking papers on (but not restricted to) the following topics:

Representing and reasoning with relevance: reasoning about the relevance of distinctions to speed up computation, relevance reasoning in real-world KR tasks including design, diagnosis and common-sense reasoning, use of relevant causal information for planning, theories of discrete approximations.

Learning in the presence of irrelevant information: removing irrelevant attributes and/or irrelevant training examples, to make feasible induction from very large datasets; methods for learning action policies for embedded agents in large state spaces by explicit construction of approximations and abstractions.

Relevance and probabilistic reasoning: simplifying/approximating Bayesian nets (both topology and values) to permit real-time reasoning; axiomatic bases for constructing abstractions and approximations of Bayesian nets and other probabilistic reasoning models.

Relevance in neural computational models: methods for evolving computations that ignore aspects of the environment to make certain classes of decisions, automated design of topologies of neural models guided by relevance reasoning based on task class.

Applications of relevance reasoning: Applications that require explicit reasoning about relevance in the context of IVHS, exploring and understanding large information repositories, etc.

We are especially interested in papers that have strong theoretical analyses complemented by experimental evidence from non-trivial applications.

Authors are invited to submit manuscripts conforming to the AIJ submission requirements by 11 Sept 1995 to

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Papers will be a subject to a standard peer review. The first round of reviews will be completed and decisions mailed by 11 December 1995. The authors of accepted and conditionally accepted manuscripts will be required to send revised versions by 1 March 1996. The special issue is tentatively scheduled to appear sometime in 1996. We also plan to publish this issue as a book.

Finally, to help us select appropriate reviewers in advance, authors should email us a title, set of keywords and a short abstract, to arrive by 4 September.

To recap the significant dates:

4/Sep/95:	Emailed titles, keywords and abstracts due
11/Sep/95:	Manuscripts dues
11/Dec/95:	First round decisions
1/Mar/96:	revised manuscripts due
?? /96:	special issue appears (tentative)