

PREFACE

The Editors

This book is the ninth in a series of proceedings of international JURIX conferences. JURIX'96 has been held on December 13, 1996 in Tilburg, The Netherlands. It was organized by the JURIX foundation for legal knowledge systems and hosted by the Center for Law, Public Administration and Informatization of the Tilburg University.

Evolving research

In the late eighties a substantial amount of AI and Law research focused on developing useful applications for the legal profession. Though some applications actually contributed towards alleviating the load of legal professionals, most of the applications developed did not meet the high expectations of researchers and users. Nevertheless, research continued. However, the overly optimistic points of departure on which a great deal of research was based have been subject to revision.

As a direct consequence, in the early nineties, we see a shift in the research effort. The shift is two-sided. On the one hand, an increasing number of researchers went "back to the basics", *i.e.*, to the real foundations of legal knowledge systems. This shift can be illustrated by the growing attention spent on ontologies, logics, model-driven knowledge acquisition, *etc.* On the other hand, the original aim of developing applications that could actually *perform* parts of the tasks of legal professionals, has changed to developing applications that can *support* legal professionals in the performance of their tasks. Perhaps this last development is best marked by the disappearance of the term "expert system".

These observations leads us to the conclusion that the current state of the art of AI and Law research has two main stags: fundamental research into the foundations of legal knowledge systems, and practical research into applications providing intelligent support for legal professionals.

The contributions

The contributions to the JURIX'96 conference clearly reflect the two observations made above; the proceedings contain a number of papers on ontologies, logics, and models of legal knowledge, as well as some papers on means of supporting legal professionals.

In the category of fundamental AI and Law research we see, for instance, Trevor Bench-Capon's and Pepijn Visser's contribution. They explore the trend towards the production of "ontologies" as part of the development of knowledge based systems. Four ontologies are analysed and judged on their respective merits. In a second paper by the same authors, the formal specification of the legal ontology developed by Van Kralingen and Visser is presented. In the "logic category", Bart Verheij presents a paper on Reason-Based Logic. RBL provides formal tools for dealing with the intuitive differences between reasoning with rules and reasoning with principles. Finally, Jeannette Quast, Jaap van den Herik and Leo Aarts address the problem of model-driven knowledge acquisition.

In the category "support for legal professionals" we find, amongst others, papers on approaches to retrieve successfully the ever increasing amount of information that engulfs citizens of the information society. Caroline Uyttendaele, Marie-Francine Moens and Jos Dumortier describe the SALOMON project, which contributes towards the automatic processing of legal texts. The aim of the project is to summarise automatically Belgian criminal cases in order to improve access to the large number of cases. The problems that lawyers experience when retrieving information from legal-text databases are also addressed by Luuk Matthijssen. He proposes a method for index organization which

shields lawyers from the internal storage structures of databases. The proposed method is based on a model of legal tasks. Along the same lines, Karl Branting and James Lester propose a framework for document reuse based on an explicit representation of the structure underlying legal documents. They argue, amongst others, that an explicit representation of the document structure allows for the rapid retrieval of documents with similar intentional structures. Finally, Kees van Noortwijk and Richard de Mulder present two applications. The first application is capable of forming clusters of documents in legal databases. The second application makes it possible to define legal concepts which can be used to search a legal database. Their applications start with an analysis of word use in legal texts.

Intelligent support for information retrieval is not the only subject addressed in the category "support for legal professionals". Andrew Stranieri and John Zeleznikow treat the difficult problems of reasoning with open texture in law. They present the Split Up system which predicts judicial decisions in property proceedings within Family Law of Australia. The system integrates rule sets and neural networks to accomplish its goals. Another difficult problem in the modeling of legal reasoning processes, namely analogical and case-based reasoning, is described in a paper by Tokuyasu Kakuta, Makoto Haraguchi, and Yoshiaki Okubo. They present the notion of "structural similarities" and a method of finding such similarities in order to conduct analogical and case-based reasoning processes. Another interesting means of supporting legal professionals in their tasks is presented by Bipin Indurkha. In his paper Indurkha describes a system which generates arguments supporting a given conclusion while taking into account extra-legal factors such as the intentions of the law-makers. Finally, Nienke den Haan and Joost Breuker offer legislative draughtsmen support in the drafting of legislation. Their approach offers semi-automatic support of core activities in legislative drafting by enabling the generation of rules based on the qualification of situations as either desirable (legal) or undesirable (not legal).

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