
Book Reviews

Automation of Legal Reasoning—A Study on Artificial Intelligence and Law

P. Wahlgren

Kluwer Law & Taxation Publishers, 1992, 436 pages

Paperback Dfl 160.00

Distributed by DA Information Services, ph: (03) 873-4411, fx: (03) 873-5679

This is a very interesting book for those who concern themselves with the automation of any aspects of legal practice. Written by a lawyer who undertook most of the research for the book at the law faculty of Stockholm University, it represents a comprehensive examination of the legal reasoning process and those aspects of it which can be undertaken by computer.

Part one of the book opens with introductions to artificial intelligence and to legal reasoning. In particular, the introduction to artificial intelligence is suitable for the lawyer who might be scared off by the name. Wahlgren shows how artificial intelligence can be applied to legal reasoning and does so in a fairly non-technical way. In some respects this chapter misses some important artificial intelligence approaches, but given his audience this is hardly surprising. He then spends some time reviewing different theories of legal reasoning. This introduction is welcome given the difficulty of finding a clear introduction to the many theories advanced over the last few hundred years.

Then, in part two he looks more carefully at aspects of the legal reasoning process. Chapter five is very long and comprises the whole of this part. It deals with the role of identification, search, interpretation, application and evaluation in legal

reasoning. He examines this in light of rules, other legal knowledge sources like cases and the context in which the language is to be interpreted. This discussion is made without reference to artificial intelligence, though it is clear that his approach is crafted by his focus on automating the process.

Hence, part three examines the potential of artificial intelligence to model legal reasoning. Here we see reviews of a few of the major systems like Hypo and the British Nationality Act, together with a discussion of hypertext. Wahlgren also presents his relatively simple system, called VF, which is a hypertext system built for labour law.

This is an impressive work, though perhaps more useful for those coming from a civil law rather than a common law background. It is also clear that the publishers asked for the manuscript in camera-ready copy, so that they did not have to typeset it, and hence save money. The trouble with this approach is that it tends to produce more typographical errors, and detracts from the overall quality of the book. For those interested in research in the field, this book is a useful addition.

Expert Systems and Case Law

Uri J. Schild

Ellis Horwood, 1992, 234 pages

Hardback \$94.50

ISBN 0-13-048463-6

Distributed by Federation Press

Artificial intelligence and law is a relatively recent field of study, though its roots extend quite some way back in history. From at least as far back as the mechanical jurisprudence of people such as Roscoe Pound, lawyers have been examining the use of rules and the poten-

tial to automate the application of these rules. During the fifties and beyond, luminaries like Layman Allen applied the razor-edged tool of logic to legal concepts and predicates, a movement which led in time to 'jurimetrics', the 'scientific jurisprudence'. More recently, over the last six or seven years, regular conferences devoted to the topic have sprung up, courses are being taught to both computer scientist and lawyer alike, and academics are bridging the divide between the scientific and the humanistic.

This book then is a worthwhile addition to this discourse. It is an intriguing book, a useful introduction, and an interesting re-examination of this increasingly developing field. This said, it is not an introduction, and presumes some knowledge on the part of the reader, in particular some understanding of AI concepts. Unusually for a book written by a computer scientist, the book deals with legal theory and example in some detail. I will come back to this point shortly. Before doing so however, I must begin with a caveat—I am currently working on an introductory work in the same field. Thus the reader should be aware of my bias, though I hope that I have been able to approach the book with the open mind that it deserves.

The aim of the book, expressed by Schild, is to '...examine the possibility of building *practical* computer systems for case-law and other domains where human discretionary judgment is called for.' (His emphasis). The book is split into three parts. The first part examine fundamental concepts of legal systems, and is devoted largely to a discussion of some relevant aspects of legal theory. For example, advancing theories of open texture, vagueness and ambiguity, and describing the legal domain of nuisance in which one of Schild's systems is built. It also discusses the

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major jurisprudential movements over the earlier half of this century, together with one recent model, that of Ronald Dworkin.

Having dispensed with these preliminaries in some detail, the book then focusses on what is termed 'Related work'. This is, in fact, a review of the major AI & Law systems of the last few years, including admirably clear descriptions of TAXMAN, Meldman's and Gardner's systems and HYPO. Somewhat less description of CABARET and GREBE is given, an oversight which is somewhat unfortunate given the models of reasoning proposed in those systems, and no mention is made at all of PROLEX or CATO. The discussion is continued of these systems in chapter four, where Schild returns to some of these systems in order to reassess them on a number of indices. These re-assessments are on the basis of 1. whether they are fact-driven, 2. whether they fall into 'deep' or 'shallow' models, 3. what system of case representation they use, and whether they are of an 'academic' or 'experiential' model. This latter analysis, according to Schild, depends on whether the expert system models the law as it is or the law as one person sees it. This seems a simple distinction, but one which I believe is gravely flawed. I will explain why shortly, but mention the last part of the book before making any overall criticism.

Finally, part three explains and describes two expert systems built by Schild et al, JURIX and Meta. JURIX is a legal expert system built in the area of the tort of nuisance. It uses as its primary source of knowledge the tort, *Salmond on Torts*, and is essentially a logic programming implementation of the cases in this treatise, with cases both for an against propositions encoded in the knowledge base. Meta, on the other hand, is an advisory system which oper-

ates in the quasi-legal domain of student advice upon registration. The student advisor can use Meta to determine whether a student should be entitled to enrol in a given course, based upon the rules and precedent.

The final chapter summarises the concepts presented and makes some suggestions for research in future.

Having outlined what the author does, a number of points are worthy of mention. First, let me say that this is an interesting reinterpretation of a number of systems and in particular the examination of existing systems from a number of differing perspectives is an interesting one. However, the book does have a number of deficiencies.

First, it adopts and makes much of this distinction between 'academic' and 'experiential' systems. Early on the author says that he is not concerned with experiential systems, rather he will look at academic systems: '...systems that aim to represent the law itself and attempt to model and support legal reasoning.' (page 24). JURIX is presented as an example of such an academic system. However, as the chapter on JURIX explains, this system is built from *Salmond on Torts*. Hence, JURIX cannot be an academic system as defined, but is rather an experiential system, based on the interpretation of the law given by the various authors of *Salmond*. Of course, this problem is not limited to JURIX: any legal expert system must rely on some domain expert whether in the flesh or in a text. Recent jurisprudence argues that, contrary to that which Schild expresses, there is no 'law' as a disembodied entity, but rather multiple interpretations which overlap to greater or lesser degrees. Schild discusses some of these theories (particularly the American Legal Realists and Dworkin), but ignores some of the most vehement

debates of recent time between these theorists and the Critical Legal Studies Movement, Critical Race Theorists, Feminist Legal Theorists and the Deconstructionists. One might argue that this oversight is immaterial, and it may be. Yet, if Schild were to consider any jurisprudence outside the narrow Hartian approach which he favours, he might have recognised that the dichotomy between 'academic' and 'experiential' systems is largely illusory. To place so much emphasis on this notion, and in fact to categorise existing legal expert systems by this approach makes for uncomfortable reading. Indeed, the thrust of the book is to explain how such academic systems should be built, an aim that, at least to this writer, is wasted effort. Rather we should build the expert systems with their target in mind, recognising that each one is simply an interpretation of law as are all treatises.

This categorisation does tend to move the book to look only at expert systems. Little time is spent examining the recent integration of information retrieval with knowledge based systems. I believe this is unfortunate, as information retrieval is, as far as the lawyer is concerned, basically what it is all about. However, the book is not intended to be an overview of all aspects of artificial intelligence and law, and so those who want greater detail on this aspect might go elsewhere.

In summary then, this book provides an idiosyncratic but interesting review of AI & Law. I would recommend the book as a useful addition for those interested in the field.

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Computers in the Law— Concepts and Applications

Brent D Roper

West Publishing Company, 1992, 481
pages

ISBN 0-314-93374-3

Using Computers in the Law— Law office without walls

Mary Ann Mason & Robert Harris

West Publishing Company, 1994, 284
pages

ISBN 0-314-02396-8

The fear and loathing of computers as a dehumanising and incomprehensible creature explains why we see a generally slow acceptance of computers in practice—certainly much slower than the acceptance in related professions such as accountancy, finance, and banking. And it goes some way towards explaining why many expensive personal computers sit on lawyers' desks and act as interesting paperweights, conversation pieces or decorative features, but not as cost-effective business tools.

This largely-held perception is also part of the reason why books such as Roper's *Computers in the Law* and Mason & Harris' *Using Computers in the Law* continue to capture a steady stream of lawyers who are prepared to pay the price of a book to help them wrestle with the beast. 'Who knows', muses the technophobic practitioner, 'Perhaps this will tell me whether I should buy one, or alternatively, how I could put the one I have to more use.' The question then is whether these books are likely to improve the lawyers' understanding of the computer and whether this improvement is likely to result in measurable benefits to the books' purchasers.

In many respects the scope of the two works is very similar, and it seems strange that the one publisher would produce two books which are such obvious rivals. It reminds me of the seemingly endless different brands of washing powder which all compete against each other even though they are made by one or two manufacturers. Still, West must see a market for both, and particularly for *Using Computers in the Law* since it is now in its third edition. Given that this is the established book, I will begin by focussing on this work first.

The authors of *Using Computers in the Law* (ucitl) state in their introduction that, since the first edition, life has changed in the law office, and now '...there is hardly a law office without computers in them. [sic]' Hence they argue that the book is intended '...to expand your mind to the possible uses of the computer which is already on your desk.' Though it may be true that virtually all American law firms have computers (I've yet to see it), I'm sure that it is not the case in the many other jurisdictions in which the book is sold. But no matter—the salient feature of the introduction is that the book is for the lawyer, and not for any paralegal or assistant.

The book is divided up into four main sections: 'What do computers do?', 'Setting up your own substantive systems on personal computers', 'legal research' and 'PC's [sic] in the real world.' The first section introduces some basic issues in the choice of hardware and software. The first chapter is called 'Twenty ways to use your computer' and it rounds up the usual suspects—word processing, litigation support, desktop publishing, graphics programs, conflict of interest databases, spreadsheets, and so on. Each type of application is summarised in a few brief paragraphs in an effort to

give the more computer-phobic lawyer a quick sketch of what he or she might find useful, without inducing a state of panic with complicated descriptions. Then in chapter two, Mason and Harris begin talking about 'The virtual office'. This is a discussion about telecommunications and network architectures. This is actually quite detailed (diagrams of passive and active star LAN topology, daisy-chaining and so forth), and I imagine quite alarming for the tyro. This is particularly the case when one considers that the subsequent three chapters discuss the introductory material on how computers work and a description of the basics of software and hardware. Hence, including chapter two as a separate chapter (rather than say integrating it more closely with the chapters on what lawyers can do with computers and a description of hardware) seems quite strange. It is a pity also since it is not hard to see readers putting the book aside after chapter two because they might feel intimidated by the 'virtual office'.

However, once one arrives at chapters three to five, the quality picks up. The discussion of computer basics in chapter three is generally good. Chapters four and five are about choosing software and hardware, though no real recommendations are made that would genuinely help the complete novice. Rather, these chapters can be better seen as more introductory description about the nature of software and hardware and are a slightly more detailed explanation of some aspects mentioned in chapter three.

By chapter six we have moved into the part on setting up substantive systems, that is, a description of how to use these machines in practice. The four types of applications covered in the ensuing chapters are word processing, databases, spreadsheets and timekeeping/billing systems. No

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surprises there. Each chapter tends to describe the very basic features of each type of application, and then goes some way towards explaining how lawyers use each feature. For example, in the databases section there are examples of litigation support databases and client tracking databases. The text at this point is interspersed with many screen shots of exemplars of the types of databases under discussion.

The final two chapters describe the *LEXIS* and *Westlaw* systems and give a brief discussion of the pros and cons of these types of online retrieval systems, and then close with a quick review of backup and archiving procedures. As a final note, throughout the text there are small computer-drawn cartoons which purport both to illustrate the feature under discussion and also be funny.

Roper's *Computers in the Law* (CITL) is aimed at paralegals, those people whose responsibility it often is to manage the computer systems while the lawyers get on with 'work'. Perhaps because of this, CITL goes into matters much more comprehensively than UCITL. It also discusses matters in a far less quirky manner, beginning as it does with the standard type of introduction to such a work, that is three chapters giving an introduction to computer systems in law and overviews of hardware and software. These chapters are extremely well handled. For example, in the first chapter there is an eminently practical section on how paralegals can work towards introducing computers into legal offices. In chapter two, there are many illustrations and photographs of the hardware under discussion, and unlike UCITL the photographs are clear and explain the point well. The layout of the chapters is also extremely clear, and there are marginal glosses

where definitions are given, so that it is very easy to find not only the definition but also where the matter is discussed in the text. Some of these descriptions are a bit dated ('Many microcomputers come standard with 40 or 80Mb hard disks.' Only two years on the figure is more like 160 to 500 Mb) though most are very good.

Then there follows similar chapters to those found in the other work: word processing, databases, spreadsheets, timekeeping and so on. Unlike UCITL, there are chapters on desktop publishing and docket control software, both of which are very good. There is also a separate chapter on litigation support software, unlike UCITL which simply subsumes litigation support into databases. While the approach of UCITL can be justified on technical grounds (litigation support software is, after all, a form of database management system) I think that lawyers will find the approach of CITL preferable. Lawyers want information presented to them which fits their model of the world. As far as I can see, they do not view litigation support in the same category as client databases, and so the approach of CITL fits their approach more clearly.

There are a number of features of the layout and structure of CITL which deserve particular attention. I have already mentioned the marginal notes. There are also key terms and review questions at the end of each chapter. This makes the book extremely good for student-use, though for a university-level course the questions would need to be supplemented. There are also a number of case studies mixed in the text. Unlike the small case studies in UCITL (so small that they barely justify mentioning), the studies in CITL are quite detailed and are highlighted

to the user because they are printed on grey rather than white paper. They are also very useful, since they illustrate how different firms of different sizes have gone about computerising. Finally, at selected places in the text there are hands-on exercises which the paralegal or lawyer with the appropriate software can undertake. These are generally very good indeed.

'So,' you ask, 'Which book should I buy?' Strangely since it is both the established book and it is aimed squarely at lawyers, UCITL is markedly inferior to CITL. My view is that CITL is far more detailed, clearer and covers all of the basics in greater depth than UCITL. CITL is almost 200 pages longer than UCITL, and each page is bigger and packed with smaller text and more information.

For the student, paralegal and the lawyer alike, I would strongly recommend CITL. All of the material in UCITL is covered in CITL, and is probably covered in a more structured, comprehensible and accessible manner.

Software Copyright Law

David Bainbridge

Pitman Publishing, 1992, xvii + 204 pages

Hardback £45.00

ISBN 0-273-03847-8

*Available from Pitman Publishing,
12/14 Slaidburn Crescent, Southport,
Merseyside, PR9 9YF England*

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Introduction to Computer Law

David Bainbridge

Pitman Publishing, 1993, 2nd edition, 300 pages

Paperback £19.99

ISBN 0-273-60106-7

Available from Pitman Publishing, 12/14 Slaidburn Crescent, Southport, Merseyside, PR9 9YF England

Computer Law

Chris Reed (ed)

Blackstone Press, 1993, 2nd edition, 341 pages

Paperback \$64.00

Distributed by The Federation Press (02) 552-2200.

International Yearbook of Law, Computers & Technology (Volume 7)

Kenneth Russell (ed)

Carfax Publishing Company, 1993, 275 pages

Available from Carfax Publishing Company, P.O. Box 25, Abingdon, Oxfordshire OX14 3UE England

In some respects these four books share a common theme, general computer law topics, together with potentially a common audience. Thus, it is worthwhile to examine each of them in light of the others.

Surprisingly, two of the books are by one author, David Bainbridge, who must have been particularly productive between 1992 and 1993. The books differ in two main respects. First, *Introduction to Computer Law* covers the four main elements necessary for any computer lawyer (intellectual property, crime, data protection and con-

tracts), whereas *Software Copyright Law* is limited only to copyright. Secondly, the audience of the former book is basically law students with some legal practitioners, whereas the latter book is aimed at computer professionals. Both are extremely well put-together, and well-written. The former is better value at £19.99 and, at least to most readers of this journal, covers the necessary elements in about the right amount of detail. Hence, there is a discussion in the first section on intellectual property, including copyright, patents, designs and so forth. The second section deals with contracts, and most of the salient types of contracts are covered, though little in the way of precedents are given. The third section covers criminal offences, such as hacking, fraud, forgery and the like. A very good table of the relevant sections is given at the back of chapter 24. Finally, the last section deals with data protection, specifically the new Act which applies in Britain. All the material one would expect to be covered is covered, and Bainbridge writes clearly. It is somewhat unusual for a legal text in that it has little in the way of footnotes, though there are tables of cases and statutes at the beginning of the text.

Software Copyright Law is very much more the type of work for computer professionals. It covers only copyright issues in any depth, though there is a description of the operation of the legislation dealing with semiconductor chips. This book has numerous diagrams (more than *Introduction to Computer Law*) which seems strange given that the lawyer is more likely to need a picture drawn for them in order to understand the technology. All the important cases are mentioned, at least up to the date of publication, and there are case summaries for major cases which are highlighted by the use of

a different font. There is obviously some overlap between the two books, though clearly *Software Copyright Law* is written for a non-lawyer readership.

The other major general introduction is Reed's *Computer Law*, now also in its second edition. Unlike Bainbridge's introduction however, this book is an edited work, with chapters contributed by Chris Reed, Christopher Millard, Gerald Dworkin, Allison Coleman and Thomas Hoeren. Edited books tend to lack the same kind of coherence as the work of one author, and this book is no different. However the work is more comprehensive than Bainbridge's, with greater cross references and footnotes. The overall organisation is a bit confusing, though it does contain information on matters not covered by the Bainbridge book: chapters on liability and evidence particularly. In any event, both books are very reasonable and worth a look.

The final book reviewed here is the *International Yearbook of Law, Computers & Technology (Volume 7)*. This is an annual work which contains collected articles of a range of contributors, and so could not really be seen as a textbook, unlike the other three works. The papers contributed fall into sections on databases, current developments and 'other'. The databases section is very good, providing a range of papers on the use of legal information systems, viruses, and data protection. Current developments include articles on multimedia, remote sensing data, software protection in Israel, and the difficulty with repetitive strain injury. The 'other' section includes reviews of conferences, major cases, and books. In all, a simple way of keeping in touch with the state of the art, though the problem remains that many of the articles will be of limited use.

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Softwars

Anthony Lawrence Clapes

Quorum, 1993, x + 326 pages

Hardback US\$45.00

ISBN 0-89930-597-0

Distributed by DA Information Services

Software, Copyright & Competition

Anthony Lawrence Clapes

Quorum, 1989, xi + 237 pages

Hardback US\$45.00

ISBN 0-89930-507-5

Distributed by DA Information Services

Anthony Lawrence Clapes is a lawyer for IBM and he writes a good yarn. These two books share many of the same characteristics: they are engagingly written, they are free of footnotes and they argue Clapes' major thesis that courts often don't know what they're doing. Each book looks at the cases which have shaped the US scene, and occasionally though rarely ventures further afield. Nonetheless they are interesting to gain an insider's view of the US scene.

Software, Copyright and Competition examines the earlier cases. So there is discussion about *SAS*, *Synercom*, *NEC v Intel*, *Broderbund*, and *Softklone*, amongst others. Rather than focus on major topics, Clapes' structure is based around the existence of cases. However, he is able to bring the cases to life and it makes for entertaining reading. His conclusion at the time, 1989, was that we have little to fear.

He had changed his tune somewhat by the time he wrote *Softwars*. His topic is now the role that intellectual property plays in the control of

the software and indeed computer industry. The book is divided up into five parts. The first on the nature and history of intellectual property in computer systems, the second on look and feel issues, the third on reverse engineering, the fourth on the future trends and finally the summation. This book too is an easy read, with chapter headings like 'Revenge of the Nerds: Guerillas, Terrorists, Peaceniks, and the Legion of Doom' or 'The lady vanishes: An academic ventures into the real world and retreats in dismay', and quotations by people like William Gibson of *Neuromancer* fame.

Both books are worth obtaining. They can be used by lawyer and layperson alike in an effort to understand just why American law is what it is today. Sometimes Clapes can come across as a know-it-all, but move beyond the pomposity and you will find useful background to the computer copyright debates.

Parallel Importation

Warwick Rothnie

Sweet & Maxwell, 1993, 630 pages

Hardback \$215.00

Distributed by The Law Book Company (02) 887-0177

This is truly an impressive work. Based on his PhD thesis undertaken at the University of London, Dr Rothnie has produced what no doubt will become the standard reference in parallel importation in Australia and probably England. With all of the discussion currently raging about parallel importation of computer software and other copyright works, this book is a must.

It is divided into ten major chapters. The first few cover introductions to trade mark, patent and copyright law on parallel imports.

There is discussion in each of these chapters on the different laws in Australia, England and the United States. This clear exposition alone would be worth the price of the book. However, there are then more theoretical chapters which seek to look closely at the actual effect of parallel importation laws on a number of different products and in a number of different markets. Hence there is a theoretical chapter of the nature of parallel importation in integrating the European Common Market, a discussion of competition policy and practice in the EC, the effect of parallel importation on the pharmaceuticals market and the book market, and finally a discussion of the aggregate effects of parallel importation.

Throughout, Rothnie demonstrates his points by reference to extensive data, and has a large number of tables and diagrams illustrating each point. Though some of the chapters will be less relevant in Australia than in Europe, the work is of such high quality that it cannot help become the standard reference. Overall, an excellent work of scholarship.