

## From the journals. . . .

### AI communications

#### Vol. 4 No. 4

**Interviews on AI and Education: Allan Collin and Stellan Ohlsson**

*Jacobijn Sandberg and Yvonne Barnard*

#### Articles

Representing and propagating constraints in temporal reasoning

*H. Tolba, F. Charpillat and J. P. Haton*

#### Conference reports

**The European Summer School on Learning**

*Stefan F. Keller*

PDK'91: International Workshop on Processing Declarative Knowledge

*Cristina Ribeiro*

The Scandinavian Conference on Image Analysis

*Emanuele Trucco*

The National Conference for AI (AAAI Conference)

*Hyacinth S. Nwana*

The European Conference on Computer Supported Cooperative Work

*Nigel Seel*

**News, books received**

**Conference calendar**

**Colophon**

#### Vol. 5 No. 1

#### Articles

The model-based construction of a case-oriented expert system

*Franz Schmalhofer and Jörg Thoben*

Machine learning and knowledge acquisition

*F. Bergadano, Y. Kodratoff and K. Morik*

The World Conference on Expert Systems

*Jay Liebowitz*

Interviews on AI and education: John Anderson and Clotilde Pontecorvo

*Jacobijn Sandberg and Yvonne Barnard*

#### ECCAI News

Guidelines for ECAI and ACAI proposals

Minutes General Assembly in Palermo

ECAI'92: Registration, programme and workshops

**Books received, news**

**Conference Calendar**

**Colophon**

### Applied artificial intelligence

#### Vol. 6, No. 1

**Special Issue: Design for High Autonomy**

#### Articles

Design for high autonomy: An overview

*Jerzy W. Rozenblit*

Endomorphis modeling concepts for high-autonomy architectures

*Bernard P. Zeigler*

Design flow modeling and knowledge-based management

*Felix Bretschneider and Helmut Lagger*

Performance-driven autonomous design of pattern-recognition systems

*Louis A. Tamburino and Mateen M. Rizki*

Reinforcement learning with classifier systems: Adaptive default hierarchy formation

*Robert E. Smith and David E. Goldberg*

Achieving flexible autonomy in multiagent systems using constraints

*Mark Evans, John Anderson and Geoff Crysdale*

**Applied artificial intelligence calendar**

## Computational intelligence

### Special Issue: Natural Language Generation

Introduction to the special issue on natural language generation

*T. Pattabhiraman and Nick Cercone*

From functional specification to syntactic structures: systemic grammar and tree adjoining grammar

*Gijoo Yang, Kathleen F. McCoy and K. Vijay-Shanker*

Generation and synchronous tree-adjoining grammars

*Stuart M. Shieber and Yves Schabes*

Using collocations for language generation

*Frank Smardja and Kathleen McKeown*

A new model of lexical choice for nouns

*Ehud Reiter*

Content determination in the generation of referring expressions

*Robert Dale and Nicholas Haddock*

Topical, temporal, and spatial constraints on linguistic realization

*Mark T. Maybury*

Using meta-comments to generate fluent text in a technical domain

*Ingrid Zukerman*

Bridging the generation gap between text planning and linguistic realization

*Marie W. Meteer*

On the need for domain communication knowledge

*Richard Kittredge, Tanya Korelsky and Owen Rambow*

A task-appropriate hybrid architecture for explanation

*Daniel D. Suthers*

Capturing high-level structure of naturally occurring, extended explanations using bottom-up strategies

*David J. Mooney, Sandra Carberry and Kathleen F. McCoy*

Conjunction reduction and gapping in clause-level coordination: an inheritance-based approach

*Gerard Kempen*

One tree—one unit: a hypothesis for the conceptual sources underlying generation

*David D. McDonald*

Recent trends in computational research on monologic discourse structure

*Eduard Hovy*

Requirements for an expert system explanation facility

*Johanna D. Moore and Cécile L. Paris*

## Decision support systems

### Vol. 8 No. 2

#### Articles

Group decision support systems: decision process, time and space

*M. E. Hatcher*

Coordinator support in a *nemawashi* decision process

*K. Watabe, C. W. Holsapple and A. B. Whinston*

Group decision support with the analytic hierarchy process

*R. F. Dyer and E. H. Forman*

A theoretical justification for Japanese *nemawashi/ringi* group decision making and an implementation of a *nemawashi/ringi* group decision support system

*M. D. Wolfe*

Electronic meeting systems: results from the field

*W. B. Martz, Jr., D. R. Vogel and J. F. Nunamaker, Jr.*

Interactive versus stand-alone group decision support systems for stakeholder identification and assumption surfacing in small groups

*A. C. Easton, D. R. Vogel and J. F. Nunamaker, Jr.*

Group decision program: A videodisc-based group decision support system

*S. Reisman, T. W. Johnson and B. T. Mayes*

A video conferencing system for the United States Army: group decision making in a geographically distributed environment

*M. Hatcher*

**Announcements and calls for papers**

**Calendar**

**Forthcoming papers**

## Engineering applications of artificial Intelligence

### Vol. 5 No. 1

#### Articles

A simple path search strategy based on calculation of free sections of motions

*Achim Schweikard*

Representing and diagnosing dynamic process data using neural networks

*R. Vaidyanathan and V. Venkatasubramanian*

Hardware design of the lower level nodes of the "HERMES" neuromorphic net

*N. G. Bourbakis and E. Barlos*

The use of expert system building tools in process planning

*Hakki Eskicioğlu*

Intelligent manual: an aid for process engineering

*M. Nussbaum and O. Molina*

FLOWES: an intelligent computational fluid dynamics system

*B. Knight and M. Petridis*

On the potentialities of AI to deal with the combinatorial complexity of a telecommunication network planning problem

*João P. Costa, João C. Climaco and José F. Craveirinha*

#### Book reviews

Experiments in the machine interpretation of visual motion

*Yuan Baozong*

Object recognition by computer: the role of geometric constraints

*Qing-Ming Wu*

#### Conference Calendar

### Vol. 5 No. 2

#### Articles

Fast reasoning with external data on personal computers

*Vladan Devedžić and Dušan Velašević*

Skill augmentation via interactive learning for visual guidance of mobile robots

*Qiuming Zhu and Dahuan Shi*

Implementation of a chemical reactor selection expert system in an artificial neural network

*A. B. Bulsari and H. Saxén*

ESPCRM—an expert system for personal computer repair and maintenance

*Goh Wee Leng and Lau Kim Teen*

Accommodating domainindependence—a new approach to the development of general natural language interfaces

*Du Xing and Xie Li*

The implementation of a deductive database for engineering correlations

*E. Lai, M. A. Moss, K. Jambunathan and B. L. Button*

Simulation of the transport processes in a thermal manufacturing system using symbolic computation

*D. Lombardi, Y. Jaluria and R. Viswanath*

#### Book review

Expert systems and robotics

*H. Hengzhang*

#### Conference calendar

## Expert systems with applications

### Vol. 4 No. 2

#### Special Section: Applied Artificial Intelligence/Expert Systems Programs in Universities

##### Guest editors' note

*Daniel E. O'Leary and Paul R. Watkins*

The Advanced Information Systems Program (AISP) at the University of Southern California

*Paul R. Watkins and Daniel E. O'Leary*

The Master of Science in Artificial Intelligence Program at the University of Georgia

*W. D. Potter, D. E. Nute and M. A. Covington*

Expert Systems Track in the Georgia State Graduate Program in Computer Information Systems: A balanced approach

*Vijay K. Vaishnavi and Gary C. Buchanan*

Artificial intelligence technology transfer in computer information systems: The Arizona State University perspective

*Michael Goul*

Application of artificial intelligence to accounting, tax and audit services: research at Brighton Young University

*Rayman D. Meservy, Eric L. Denna and James V. Hansen*

Integrating expert systems and artificial intelligence in accounting: a description of the academic program at Memphis State University

*Michael L. Behrens and Paul John Steinbart*

The Master of Science concentration in applied artificial intelligence and expert systems at George Washington University

*John P. Coyne*

#### Articles

A case-based reasoning approach to real estate property appraisal

*Avelino J. Gonzalez and Raymond Laureano-Ortiz*

A risk-identification tool for managers planning expert system applications

*Douglas Hillmer, Anita J. La Salle, Larry Medsker and Greg Welsh*

Determining certainty factors with the analytic hierarchy process

*Ernest H. Forman*

#### NTIS section

#### Software survey section

#### New patents

## Expert systems

### Vol. 8 No. 2

#### Articles

Multi-domain expert systems

*Chiang-Choon Danny Poo and Hongjun Lu*

A shell for cooperating expert systems

*E. Oliveira and R. Camacho*

The evolution of PAMELA

*Franz Barachini*

Artificial intelligence and economic modelling

*Hans W. Gottinger*

A suggested descriptive framework for the comparison of knowledge-based systems methodologies

*D. K. Hilal and H. Soltan*

#### Interview

Ray Shaw

*Kenneth Owen*

#### Software review

Evaluation of ProKappa

*A. T. Joseph*

#### News

#### Conference report

Manufacturing Intelligence Awards 1991

#### Book Reviews

#### Diary

### Vol. 8 No. 3

#### Articles

Barriers to adopting management expert systems: case studies of management accounting applications which failed. *M. King and L. McAulay*

An IKB defect classification system for automated industrial radiographic inspection

*A. Kehoe and G. A. Parker*

Temporal reasoning in blood gas diagnosis

*Yap Wai Leng and L. F. Pau*

ALCAI—automated local area networks configuration aid

*Y. Lirov, S. Prakash and S. Ravikumar*

Logic aids for interviewing experts

*Joseph S. di Piazza*

#### Interview

Peter Jenkins

*Kenneth Owen*

#### News

#### Conference report

#### Book reviews

#### Diary

### Vol. 8 No. 4

#### Articles

TRISTAR: an expert system for vegetation processes

*R. Hunt, D. A. J. Middleton, J. P. Grime and J. G. Hodgson*

Expert system evaluation techniques: a selected bibliography

*Peter Grogono, Aida Batarekh, Alun Preece, Rajjan Shinghal and Ching Suen*

Integration of expert systems in advanced fourth generation languages

*Jeremy Kirby and Dr Klaus Meissner*

A unification-based approach for knowledge base verification

*Faruk Polat and H. Altay Guvenir*

Integrating knowledge-based systems with mainframe data processing via terminal operator emulation

*Philip Slatter and Toshio Nomura*

#### Technical note

Designing a practical user interface for an expert system shell

*Peter D. G. Cradwick*

#### Interview

Ted Lovesey

*Kenneth Owen*

#### News

#### Conference report

#### Book reviews

#### Diary

#### Index to volume 8

## Human-computer interaction

### Vol. 6 Nos. 3/4

#### Editorial

Introduction to this special issue on design rationale

*John M. Carroll and Thomas P. Moran*

#### Articles

Questions, options, and criteria: elements of design space analysis

*Allan MacLean, Richard M. Young, Victoria M. E. Bellotti and Thomas P. Moran*

What's in design rationale?

*Jintae Lee and Kum-Yew Lai*

Deliberate evolution: stalking the view matcher in design space

*John M. Carroll and Mary Beth Rosson*

Problem-centered design for expressiveness and facility in a graphical programming system

*Clayton Lewis, John Rieman and Brigham Bell*

A process-oriented approach to design rationale

*E. Jeffrey Conklin and K. C. Burgess Yakemovic*

Making argumentation serve design

*Gerhard Fisher, Andreas C. Lemke, Raymond McCall and Anders I. Morch*

#### Acknowledgement to reviewers

#### Author index for volume 6, 1991

## IEEEExpert

Vol. 7 No. 2

### Articles

A new level of language generation technology: capabilities and possibilities

*Eduard H. Hovy*

Building a better critic: recent empirical results

*Barry G. Silverman*

Resource configuration and allocation: a case study of constrained heuristic search

*Neena Sathi, Mark S. Fox, Rajay Goyal and Alexander S. Kott*

VIDES: an expert system for visually identifying microfossils

*Peter Alan Swaby*

Fabricating composite materials: a comprehensive problem-solving architecture based on generic tasks

*Jon Sticklen, Ahmed Kamel, Martin Hawley and Valerie Adegbite*

## Information and decision technologies

Vol. 18 No. 2

### Special issue on Expertext

#### Introduction

*Roy Rada and James M. Nyce*

Is expertext support feasible in worklife applications?

An empirical study using an expert panel for simulating 'optimal' expertext support

*Toomas Timpka, Tom Buur and Per Hedblom*

Explanation of diagnostic reasoning. An analysis of medical texts

*P. M. Wognum and N. J. L. Mars*

An expertext authoring tool

*Weigang Wang, Roy Rada, Karl Strickland and Claude Ghaoui*

Managing documentation for software reuse

*Hafedh Mili and Manon Grenier*

Biomedical visualization and hypertext. Creating integrated, 'intelligent' systems for clinical medicine

*Steven Barney*

Normative models and situated practice in medicine. Towards more adequate system design and development

*William Graves III and James M. Nyce*

## Intelligent instruments and computers

Vol. 9 No. 2

### Editorials

#### IIC's New Format

*Ron Belchamber, Gary W. Kramer, Frank A. Settle, Jr. and Ron Williams*

#### Now Using E-Mail

*Ron Williams*

### Articles

A fully automatic robotic sample preparation system—the use of Ethernet to communicate between a GC chromatographic data analysis system and a Zymate robot

*M. J. Crook, C. J. Deakin and B. Whitmore*

A robotized system for measuring and weighing polymer specimens for physical properties and chemical resistance testing

*R. D. Jones and J. B. Cross*

Standards for interfacing and interconnecting chemical instrumentation

*Gary W. Kramer*

The object is productivity

*T. C. O'Haver*

### New products

### Calendar and courses

## Interacting with computers

### Vol. 4 No. 1

#### Articles

Animated demonstrations for exploratory learners

*S. J. Payne, L. Chesworth and E. Hill*

Motivation, practice and guidelines for 'undoing'

*Y. Yang*

Combining CSCW and user support techniques to design collaborative user interfaces

*R. Hellman*

Branching selection of suggestions

*J. Verrips*

Formal interactive menu design

*J. Ukelson and J. Makowsky*

The role of task analysis in systems design

*D. Benyon*

Task analysis and systems analysis for software development

*D. Diaper and M. Addison*

## International journal of computer vision

### Vol. 7 No. 2

#### Articles

Subspace methods for recovering rigid motion I: algorithm and implementation

*David J. Heeger and Allan D. Jepson*

Impossible and ambiguous shading patterns

*Michael J. Brooks, Wojciech Chojnacki and Ryszard Kozera*

On the relative complexity of active vs passive visual search

*John K. Tsotsos*

A locally adaptive window for signal matching

*Masatoshi Okutomi and Takeo Kanade*

## International journal of man-machine studies

### Vol. 36 No. 4

#### Articles

Can experts' explanations help students develop program design skills?

*M. C. Linn and M. J. Clancy*

Second order structures in multi-criteria decision making

*R. R. Yager*

Hierarchical search support for hypertext on-line documentation

*T. R. Girill and C. H. Luk*

Network and multi-dimensional representations of the declarative knowledge of human-computer interface design experts

*D. J. Gillan, S. D. Breedin and N. J. Cooke*

Learning expert systems by being corrected

*R. P. Clement*

### Vol. 36 No. 5

#### Articles

Cognitive modelling of fighter aircraft process control: a step towards an intelligent on-board assistance system.

*R. Amalberti and F. Deblon*

Probing the mental models of system state categories with multi-dimensional scaling

*B. G. Coury, M. Zubritzky Weiland and V. Grayson Cuolock-Knopp*

Skill metrics on a genetic graph as a mechanism for driving adaptation in an operating system interface

*C. J. Copeland and S. R. Eccles*

Analysing the novice analyst: cognitive models in software engineering

*A. G. Sutcliffe and N. A. M. Maiden*

Cognitive walkthroughs: a method for theory-based evaluation of user interface

*P. G. Polson, C. Lewis, J. Rieman and C. Wharton*

## Journal of applied non-classical logics

Vol. 1 No. 2

Special Issue: Uncertainty, conditionals and non-monotonicity

Introduction

Quantified uncertainty

Conditionals and belief revision

Non-monotonicity

## Journal of experimental & theoretical artificial intelligence

Vol. 4 No. 1

Articles

Connectionism and functionalism: the importance of being a subsymbolist

*M. Frixione and G. Spinelli*

On the semantics of inheritance networks

*Y. Dimopoulos*

Analysis system for Sinhalese unit structure

*S. Herath, T. Ikeda, S. Ishizaki, Y. Anzai and H. Aiso*

Abstract symbol systems (an exercise of the bottom-up approach in artificial intelligence)

*J. Hromkovič, J. Kelemen and J. Waczulík*

Handling noise in EBL: an abductive approach

*G. Mani*

## Journal of intelligent and robotic systems

Vol. 5 No. 2

Articles

A noninverting algorithm for path tracking of two co-operating robot arms and its parallel implementation

*S. D. Voliotis and M. A. Christodoulou*

Development of expert control systems: a pattern classification and recognition approach

*Magdi S. Mahmoud, Ahmed A. Abou-Elseoud and Samir Kotob*

A framework for intelligent test data generation

*Kai-Hsing Chang, James H. Cross II, W. Homer Carlisle and David B. Brown*

Expert supervision and control of a large-scale plant

*Robert E. King*

Cooperative grouping processes for edge segmentation

*Kimon P. Valavanis and Stefan Surka*

Explanation facility for neural networks

*L. F. Pau and T. Götzsche*

Calendar of events

## Knowledge acquisition

Vol. 4 No. 1

Articles

KADS: a modelling approach to knowledge engineering

*B. J. Wielinga, A. Th. Schreiber and J. A. Breuker*

Use of KADS to create a conceptual model of the ONCOCIN task

*M. Linster and M. A. Musen*

Analysing system—user cooperation in KADS

*H. P. de Greef and J. A. Breuker*

Shelley—computer-aided knowledge engineering

*A. Anjewierden, J. Wielemaker and C. Toussaint*

(ML)<sup>2</sup>: A formal language for KADS models of expertise.

*F. van Hermelen and J. Balder*

## Kybernetes

Vol. 21 No. 2

### Articles

A pattern-based interpretation of the US economic system

*Ernst P. Billeter-Frey*

Alienation in community and society: effects of increasing environmental complexity

*Felix Geyer*

A new compensation method to improve the positioning accuracy of robots in real time

*E. Niedermayr and N. Roth*

### Communications

Order and chaos in DNA - the Denis Guichard Prize-winner: Jean-Claude Perez

*Peter J. Marcer*

The nature of creativity

*Brennig James*

Support for organizational processes

*Ian Robertson*

### News, conferences and technical reports

### Book reviews

### Announcements

### Special announcements

## Pattern analysis and machine intelligence

Vol. 14 No. 2

### Special issue on interpretation of 3-D Scenes—Part II

Introduction to the special issue on interpretation of 3-D scenes

*W. E. L. Grimson and D. P. Huttenlocher*

### Papers

Single lens stereo with a plenoptic camera

*E. H. Adelson and J. Y. A. Wang*

Adaptive 3-D object recognition from multiple views

*M. Seibert and A. M. Waxman*

Structural indexing: efficient 3-D object recognition

*F. Stein and G. Medioni*

The representation space paradigm of concurrent evolving object descriptions

*A. F. Bobick and R. C. Bolles*

Using extremal boundaries for 3-D object modeling

*R. Vaillant and O. D. Faugeras*

3-D shape recovery using distributed aspect matching

*S. J. Dickinson, A. P. Pentland and A. Rosenfeld*

Recursive 3-D road and relative ego-state recognition

*E. D. Dickmanns and B. D. Mysliwetz*

Performance evaluation of scene registration and stereo matching for cartographic feature extraction

*Y. C. Hsieh, D. M. McKeown and F. P. Perlant*

A method for registration of 3-D shapes

*P. J. Besl and N. D. McKay*

### Correspondence

Omni-directional stereo

*H. Ishiguro, M. Yamamoto and S. Tsuji*

Color reflectance modeling using a polychromatic laser range sensor

*R. Baribeau, M. Rioux and G. Godin*

Using models to improve stereo reconstruction

*H. Maître and W. Luo*

High-resolution terrain map from multiple sensor data

*I. S. Kweon and T. Kanade*

3-D corridor scene modeling from a single view under natural lighting conditions

*T. Shakunaga*

The recovery and understanding of a line drawing from indoor scenes

*M. Straforini, C. Coelho, M. Campani and V. Torre*

Understanding object configurations using range images

*P. G. Mulgaonkar, C. K. Cowan and J. DeCurtins*

Vol. 14 No. 3

### Papers

Singularities of principal direction fields from 3-D images

*P. T. Sander and S. W. Zucker*

Motion and structure from line correspondences: closed-form solution, uniqueness, and optimization

*J. Weng, T. S. Huang and N. Ahuja*

Some defects in finite-difference edge finders

*M. M. Fleck*

On the detection of motion and the computation of optical flow

*J. H. Duncan and T.-C. Chou*

Intrinsic constraints in space-time filtering: a new approach to representing uncertainty in low-level vision

*R. S. Jasinschi*

Constrained restoration and the recovery of discontinuities

*D. Geman and G. Reynolds*

### Correspondence

Kernel designs for efficient multiresolution edge detection and orientation estimation

*R. Wilson and A. H. Bhalerao*

Classification in noisy environments using a distance measure between structural symbolic descriptions

*F. Esposito, D. Malerba and G. Semeraro*

Vol. 14 No. 4

### Papers

A generalised depth estimation algorithm with a single image

*S.-H. Lai, C.-W. Fu and S. Chang*

Multiple widths yield reliable finite differences

*M. M. Fleck*

Scale-based detection of corners of planar curves

*A. Rattarangsi and R. T. Chin*

Reasoning about edges in scale space

*Y. Lu and R. C. Jain*

An algebraic approach to feature interactions

*R. R. Karinithi and D. Nau*

### Correspondence

Analysis of 2-D occlusion by subtracting out

*J. R. Ullmann*

Complex autoregressive model for shape recognition

*I. Sekita, T. Kurita and N. Otsu*

What's in a set of points?

*N. Kiryati and A. M. Bruckstein*

## Pattern recognition letters

### Vol. 13 No. 3

#### Articles

Linear mappings of local data structures

*M. Aladjem and I. Dinstein*

Fast erosion and dilation by contour processing and thresholding of distance maps

*I. Ragnemalm*

Multiscale color image enhancement

*A. Toet*

The design of morphological filters using multiple structuring elements, Part II: open(close) and close(open)

*R. Jones and I. Svalbe*

A hierarchical 'square' tessellation of the sphere

*G. Borgefors*

Shape recognition using the Kohonen self-organising feature map

*S. S. Sarkaria, A. J. Harget and E. Claridge*

Feature frequency matrices as texture image representation

*H. C. Shen and C. Y. C. Bie*

Adaptive character recognition system

*A. A. Verikas, M. I. Bachauskene, S. J. Vilunas and*

*D. R. Skaisgiris*

A three-dimensional primitive extraction of long bones obtained from bi-dimensional Fourier descriptors

*V. Burdin, F. Ghorbel, J. L. de Bougrenet de la*

*Tocnaye and C. Roux*

**Call for papers**

### Vol. 13 No. 4

#### Articles

Why progress in machine vision is so slow

*T. Pavlidis*

Vector piece-wise regression versus clustering (definition and comparative analysis)

*V. L. Brailovsky*

Ridge points in Euclidean distance maps

*C. Arcelli and G. Sanniti di Baja*

A fast histogram-clustering approach for multi-level thresholding

*D.-M. Tsai and Y.-H. Chen*

Local symmetry modeling in multi-dimensional images

*O. Hansen and J. Bigün*

3D object recognition from 2D images using geometric hashing

*D. M. Gavrilu and F. C. A. Groen*

Context knowledge and search control issues in object-oriented Prolog-based image understanding

*B. Bell and L. F. Pau*

A fast and adaptive method to estimate texture statistics by the spatial gray level dependence matrix (SGLDM) for texture image segmentation

*J. H. Lee, N. I. Lee and S. D. Kim*

**Call for papers**

## User modeling and user-adapted interaction

### Vol. 2 Nos. 1/2

#### Special issue on plan recognition

Weighted abduction for plan ascription

*Douglas E. Appelt and Martha E. Pollack*

A meta-rule approach to Flexible Plan Recognition in Dialogue

*Rhonda Eller and Sandra Carberry*

Controlling inference in plan recognition

*James Mayfield*

On the interaction between plan recognition and intelligent interfaces

*Bradley A. Goodman and Diane J. Litman*

Student modeling to support multiple instructional approaches

*Robert V. London*

Intention structure and extended responses in a portable natural language interface

*Judith Schaffer Sider and John D. Burger*