

## From the journals. . . .

### Ai applications

Vol. 9 No. 3

#### Articles

Natural-resource decision-support—theory and practice

*H. M. Rauscher*

Decision-support for natural-resources management—models, gis, and expert systems

*K. Fedra*

A decision-support system for watershed and province analysis in the pacific-northwest

*K. M. Reynolds, D. Latham, M. Saunders, R. Olson, B. Miller, M. Foster, D. Schmoldt, J. Steffenson, P. Cunningham and L. Bednar*

Application of logic programming to decision-support systems in ecology

*D. Robertson, M. Haggith, G. Kendon, J. Agusti and D. Goldsborough*

A toolkit approach to developing forest management advisory systems in prolog

*D. E. Nute, H. M. Rauscher, D. A. Perala, G. J. Zhu, Y. S. Chang and G. E. Host*

The ecology and management of aspen

*H. M. Rauscher, D. A. Perala and C. V. Worth*

The forest-management-advisory-system

*H. M. Rauscher, D. E. Nute, D. A. Perala, G. J. Zhu, Y. S. Chang, G. E. Host and J. W. Benzie*

A knowledge-based systems-approach to agroforestry research and extension

*D. H. Walker, F. L. Sinclair and G. Kendon*

Object-oriented system-design for natural-resource decision-support—the northeast decision-model

*R. P. Kollasch and M. J. Twery*

Northeast decision-model design document

*H. M. Rauscher, M. Twery, J. Palmer, R. Hoffman, S. Stout, J. Steinman, P. Kollasch, D. Bennett, L. Thomasma, J. Hornbeck and C. V. Worth*

Assessing and communicating uncertainty in decision-support system—lessons from an ecosystem policy analysis

*D. A. Cleaves*

Designing configurable decision-support software—lessons learned

*S. B. Williams, D. J. Roschke and D. R. Holtfrehlich*

Building a decision-support system for ecosystem management—klems experience

*R. J. Laacke*

---

### Applied artificial intelligence

Vol. 9 No. 4

Special issue: intelligent agents and multi-agent systems, Part 1

Applying agent technology

*Nicholas R. Jennings and Michael Wooldridge*

Cooperative seismic data interpretation for nuclear test ban treaty verification

*Cindy L. Mason*

Agent-based approach to health care management

*Jun Huang, N. R. Jennings and John Fox*

On the role of BDI modeling for integrated control and coordinated behavior in autonomous agents

*Innes A. Ferguson*

---

### Artificial intelligence

Vol. 76 Nos. 1, 2

#### Articles

Planning—what it is, what it could be—an introduction to the special issue on planning and scheduling

*D. McDermott and J. Hendler*

Expressive equivalence of planning formalisms

*C. Backstrom*

Planning under time constraints in stochastic domains

*T. Dean, L. P. Kaelbling, J. Kirman and A. Nicholson*

Complexity, decidability and undecidability results for domain-independent planning

*K. Erol, D. S. Nau and V. S. Subrahmanian*

Approximate planning

*M. L. Ginsberg*

Understanding planner behavior

*A. E. Howe and P. R. Cohen*

Planning as refinement search—a unified framework for

evaluating design tradeoffs in partial-order planning

*S. Kambhamati, C. A. Knoblock and Q. Yang*

An algorithm for probabilistic planning

*N. Kushmerick, S. Hanks and D. S. Weld*

Motion planning with uncertainty—a landmark approach

*A. Lazanas and J. C. Latombe*

A general programming language for unified planning and control

*R. Levinson*

Cabins—a framework of knowledge acquisition and iterative revision for schedule improvement and reactive repair

*K. Miyashita and K. Sycara*

Plan reuse versus plan generation—a theoretical and empirical-analysis

*B. Nebel and J. Koehler*

Backtracking techniques for the job-shop scheduling constraint satisfaction problem

*N. Sadeh, K. Sycara and Y. L. Xiong*

A multivalued logic approach to integrating planning and control

*A. Saffiotti, K. Konolige and E. H. Ruspini*

**Vol. 77 No. 1**

**Articles**

Interpreting non-3-d line-drawings

*A. Shimaya*

Abduction as belief revision

*C. Boutilier and V. Becher*

Artificial-intelligence—an empirical science

*H. A. Simon*

Ipus—an architecture for the integrated processing and understanding of signals

*V. R. Lesser, S. H. Nawab and F. J. Klassner*

Agent searching in a tree and the optimality of iterative deepening (vol 71, pg 195, 1994)

*P. Dasgupta, P. P. Chakrabarti and S. C. Desarka*

## Artificial intelligence review

**Vol. 9 Nos. 2, 3**

Integration of natural language and vision processing: *Intelligent multimedia*

Research in multimedia systems at DFKI

*Elisabeth André and Thomas Rist*

Apple Computer's authoring tools & titles R&D program

*James C. Spohrer*

Research into iconic communication at the University of Brighton

*Colin Beardon*

Temporal codes within a typology of cooperation between modalities

*Jean-Claude Martin and Dominique Béroule*

Research in multimedia and multimodal parsing and generation

*Mark T. Maybury*

A third modality of natural language?

*Oliviero Stock*

Generating coherent presentations employing textual and visual material

*Elisabeth André and Thomas Rist*

The design of a model-based multimedia interaction manager

*Yigal Arens and Eduard Hovy*

Discourse structures in iconoic communication

*Colin Beardon*

Communicating through pictures

*Masoud Yazdani and Stuart Mealing*

Language visualisation: applications and theoretical foundations of a primitive-based approach

*A. Narayanan, D. Manuel, L. Ford, D. Talis and M. Yazdani*

## Data & knowledge engineering

**Vol. 16 No. 2**

**Articles**

Understanding database design expertise

*V. C. Storey, C. B. Thompson and S. Ram*

Argumentative logics: Reasoning with classically inconsistent information

*M. Elvang-Gøransson and A. Hunter*

Modelling of set membership: The notion and the issues

*R. Moutschnig-Pitrik and V. C. Storey*

**Vol. 16 No. 3**

**Articles**

Different roles and mutual dependencies of data, information, and knowledge—An AI perspective on their integration

*A. Aamodt and M. Nygård*

The operational semantics of user-defined relationships in object oriented database systems

*O. Diaz*

Formulating global integrity constraints during derivation of global schema

*M. P. Reddy, B. E. Prasad and A. Gupta*

## Engineering applications of artificial intelligence

**Vol. 8 No. 4**

**Articles**

Qualitative simulation and constraint logic programming

*R. Leitch and E. Martinelli*

Automated extraction of attribute hierarchies for an improved decision-tree classifier

*S. Nakasuka and T. Koishi*

Flexible planning by integrating multilevel reasoning

*A. Armando, A. Cimatti, E. Giunchiglia, P. Pecchiari, L. Spalazzi and P. Traverso*

Expert control-systems. 1. concepts, characteristics and issues

*D. A. Linkens and M. Y. Chen*

Fuzzy and neuro-fuzzy computing models for electric-load forecasting

*P. K. Dash, A. C. Liew, S. Rahman and S. Dash*

A process model for knowledge-based concrete bridge design.

*H. S. Kumar, C. S. Krishnamoorthy and N. Rajagopalan*

An expert-system-assisted reliability-analysis of electric-power networks

*I. Matijevics and L. Jozsa*

Electric-power system alarm management with an oop toolkit

*B. Ramsay, K. Hasan and I. Moyes*

Correction of slant in handwritten numerals for automated document processing

*M. V. Nagendraprasad, A. Gupta and V. Feliberti*

Building temporal constraints into knowledge bases for process-control—an examination—reply

*S. Parthasarathy*

## Expert systems with applications

### Vol. 9 No. 2

#### Articles

Development of a kbs for personal financial-planning guided by pragmatic kads

*S. Dirks, S. Kingston and M. Haggith*

Anchor inspector—intended and unintended effects of a graphics-oriented expert-system

*E. W. Stein and D. G. Evans*

The rapid project—knowledge-based design of dental prostheses

*P. Hammond, J. C. Davenport, F. J. Fitzpatrick, D.*

*A. Randell and M. Demattos*

Understanding expert-systems success and failure

*P. Duchessi and R. M. Okeefe*

Veg—intelligent workbench for studying earths vegetation

*P. R. Harrison, P. A. Harrison and D. S. Kimes*

Cxpert—a rule-based scheduling system

*S. J. Lee and C. H. Wu*

Lifenet—a knowledge-based decision-support tool for the risk assessment of adolescent suicide

*W. J. Ferns*

A multidimension knowledge structure

*P. K. O. Chow and D. S. Yeung*

A neuro-expert system with a conflict-resolving meta-neural network

*F. Ulgen and N. Akamatsu*

Knowledge acquisition tool for casc-based reasoning systems

*A. Mechitov, H. M. Moshkovich, D. L. Olson and B. Killingsworth*

Utilizing a neural logic expert-system in currency option trading

*T. S. Quah, C. L. Tan, H. H. Teh and B. S.*

*Srinivasan*

An intelligent order entry system for portable industrial air-compressors in a manufacturing environment

*S. Ganesan, E. D. Robe, D. A. Roth, E. C. Chung,*

*C. A. Vassiliadis, G. D. Allen*

Expert-system support in the textile-industry—end-product production planning decisions

*F. N. Ford and J. Rager*

## International journal of computer vision

### Vol. 16 No. 1

#### Articles

Probabilistic analysis of the application of the cross ratio to model based vision

*Stephan J. Maybank*

Object-centered surface reconstruction: combining multi-image stereo and shading

*P. Fua and Y. G. Leclerc*

Planar object recognition using projective shape representation

*C. A. Rothwell, A. Zisserman, D. A. Forsyth and*

*J. L. Mundy*

## International journal of human-computer studies

### Vol. 42 No. 4

#### Articles

User errors in database query composition

*J. B. Smelcer*

There was a long pause: influencing turn-taking behaviour in human-human and human-computer spoken dialogues

*A. Johnstone, U. Berry and T. Nguyen*

CODE 4: a unified system for managing conceptual knowledge

*D. Skuce and T. C. Lethbridge*

### Vol. 42 No. 5

#### Articles

Acquisition and exploitation of gradual knowledge

*R. Dieng, O. Corby and S. Lapalut*

Rethinking video as a technology for interpersonal communications: theory and design implications

*S. Whittaker*

Cognitive support: designing aiding to supplement human knowledge

*H. P. de Greef and M. A. Neerinx*

### Vol. 43 No. 1

#### Articles

The role of flight progress strips in en route air traffic control: a time-series analysis

*M. B. Edwards, D. K. Fuller, O. U. Vortac and C. A. Manning*

StEP(3D): a standardized evaluation plan for three-dimensional interaction techniques

*S. B. Grissom and G. Perlman*

Consultant-2: pre- and post-processing of Machine Learning applications

*D. Sleeman, M. Rissakis, S. Craw, N. Graner and S. Sharma*

A comprehension-based model of correct performance and errors in skilled, display-based, human-computer interaction

*M. Kitajima and P. G. Polson*

Using interaction framework to guide the design of interactive systems

*A. E. Blandford, P. J. Barnard and M. D. Harrison*

Structured and opportunistic processing in design: a critical discussion

*L. J. Ball and T. C. Ormerod*

## International journal of intelligent systems

**Vol. 10 No. 10**

**Articles**

Probabilistic logic via capacities

*T. Kampke*

Automated knowledge derivation—domain-independent techniques for domain-restricted text sources

*L. Boggess, J. Hodges and J. Cordova*

Nonmonotonic characterization of induction and its application to inductive learning

*G. Nunez, U. Cortes and J. Larrosa*

## Journal of intelligent & robotic systems

**Vol. 14 No. 1**

**Articles**

Guest editorial—parallel and redundant robots

*M. Jamshidi*

A comparison of methods for the control of redundantly-actuated robotic systems

*M. Nahon*

The mechanical design of a 7-axes manipulator with kinematic isotropy.

*F. Ranjbaran, J. Angeles, M. A. Gonzalezpalacios, R. V. Patel*

Overview of damped least-squares methods for inverse kinematics of robot manipulators

*A. S. Deo and I. D. Walker*

Robust adaptive-control of redundant manipulators

*R. Colbaugh and K. Glass*

Extended impedance control using real and virtual sensors for redundant manipulators

*M. K. Long and P. G. Backes*

Calculation of repeatable control strategies for kinematically redundant manipulators

*R. G. Roberts, A. A. Maclejewski*

**Vol. 14 No. 2**

**Articles**

Extracting knowledge from examples—induction of heuristic rules for wheelchair prescription

*S. M. Callahan, G. Voland*

Quality of stabilization of robot interacting with dynamic environment

*Y. Ekalo and M. Vukobratovic*

Aimy—an autonomous mobile robot navigation in unknown environment with infrared detector system

*H. M. Yu and R. Malik*

An approach to automatic-generation of dynamic equations of elastic joint manipulators in symbolic language

*J. A. Ochier, C. D. Mladenova and P. C. Muller*

Collision-avoidance for a 2-arm robot by reflex actions—simulations and experimentations

*L. Cellier, P. Dauchez, R. Zapata and M. Uchiyama*

## Journal of intelligent manufacturing

**Vol. 6 No. 4**

**Articles**

Fuzzy constraints in job-shop scheduling

*D. Dubois, H. Fargier and H. Prade*

Intelligent optimization of component onsertion in multi-head concurrent operation pcba machines

*R. Desouza and L. J. Wu*

Multiple domain feature mapping—a methodology based on deep models of features

*S. S. Lim, L. E. N. Lim, I. B. H. Lee and B. K. A. Ngoi*

Generic form feature recognition and operation selection using connectionist modeling

*Z. Gu, Y. F. Zhang and A. Y. C. Nee*

**Vol. 6 No. 5**

**Articles**

Artificial-intelligence applications in design for manufacturing and concurrent engineering. 1. editorial

*J. M. Sanchez*

An integrated form-feature-based design system for manufacturing

*C. J. Su, T. L. Sun, C. N. Wu and R. J. Mayer*

Concurrent intelligent rapid prototyping environment

*S. H. Masood and B. S. Lim*

The use of semantic networks to support concurrent engineering in semiconductor development

*K. J. J. Rogers, J. W. Priest and G. Haddock*

Knowledge-based manufacturability assessment—an object-oriented approach

*Y. M. Chen, R. A. Miller and K. Sevenler*

Expert system-based selection of the preferred direction of build for rapid prototyping processes

*D. Frank and G. Fadel*

Expert-systems in engineering design—an application for injection-molding of plastic parts

*S. Steadman and K. M. Pell*

## Journal of logic programming

### Vol. 24 No 1

#### Articles

Efficient top-down computation of queries under the well-founded semantics

*W. D. Chen, T. Swift and D. S. Warren*

On the correctness of unfold/fold transformation of normal and extended logic programs

*C. Aravindan and P. M. Dung*

Analysis of residuating logic programs

*M. Hanus*

### Vol. 25 No. 1

#### Articles

Depth-bounded bottom-up evaluation of logic programs

*J. Chomicki*

Bottom-up computation of perfect models for disjunctive theories

*J. A. Fernandez and J. Minker*

On specifying database updates

*R. Reiter*

## Kybernetes

### Vol. 24 No. 5

#### Articles

##### Contemporary systems and cybernetics

Applications for new technology. Automation and cybernetics, Medical cybernetics, Neural networks, Management cybernetics. A mathematical formalization of the principle of ethical endogeneity

*Masudul Alam Choudhury*

Implementation of the ALIENOR technique in the multidimensional bisection method and application to global optimization: a new accelerated algorithm

*H. Ammar and Y. Cherruault*

##### Short papers

Developing a theoretical foundation for the laws of conservation

*Yi Lin*

Equation solving with PCs

*Gerard Zielinski*

##### Communications and forum

Metalogue: why ask questions?

*Joop Kielema*

Towards a general theory of disease

*Brennig James*

### Vol. 24 No. 6

#### Articles

##### Contemporary systems and cybernetics

Cybernetics and robotics, Medical cybernetics, Internet bookshop

Cardiac rhythm as an indicator of normal and pathological adaptation to mental effort

*D. A. Napalkov, M. L. Sosenko and I. A. Shestova*

Modelling dynamic systems with biased regression and spectral methods

*Ralf Östermark*

Applying fuzzy logic to robot navigation

*Edward T. Lee*

### Short papers

Modelling of a system boundary

*Hong-Xing Cao*

Management cybernetics: manufacturing in China

*Jialei Wu and Gerhard Plenert*

Turing-computability and artificial intelligence: Gödel's incompleteness results

*Sang Wu Kim and S. M. Kim*

### Vol. 24 No. 7

#### Modern applications of systems and cybernetics

The unique reach of cybernetics in our *fin-de-siècle*

*C. Musés*

Cybernetics: the bridge between divided knowledge and transdisciplinarity

*Edmond Nicolau*

The decade of the brain—some comments

*Alex M. Andrew*

Concept-maps, logic and the cerebral hemispheres

*Jacob Thimor and Uri Fidelman*

On integral, differential, and integro-differential equations, perturbation and averaging methods

*George Adomian*

Cybernetic thinking in economic planning: an exploratory study for India

*Amitava Ghosal*

A systems model of the Malaysian macro-economy

*Masudul Alam Choudhury*

A simple model of life expectancy with subjective parameters

*R. C. Bassanezi and L. C. de Barros*

Fuzzy threshold functions and applications

*Edward T. Lee and Te-Shun Chou*

## Machine learning

### Vol. 20 Nos. 1, 2

#### Articles

Evaluation and selection of biases in machine learning

*D. F. Gordon and M. Desjardins*

Bias and the quantification of stability

*P. Turney*

Inductive policy—the pragmatics of bias selection

*F. J. Provost and B. G. Buchanan*

Recursive automatic bias selection for classifier construction

*C. E. Brodley*

The appropriateness of predicate invention as bias shift operation in ilp

*I. Stahl*

Declarative bias for specific-to-general ilp systems

*H. Ade, L. Deraedt and M. Bruynooghe*

Shifting vocabulary bias in speedup learning

*D. Subramanian*

Learning bayesian networks—the combination of knowledge and statistical-data

*D. Heckerman, D. Geiger and D. M. Chickering*

Learning binary relations using weighted majority voting

*S. A. Goldman and M. K. Warmuth*

Support-vector networks

*C. Cortes and V. Vapnik*

## Pattern analysis and machine intelligence

### Vol. 17 No. 9

#### Articles

Integrating vision modules: stereo, shading, grouping, and line labeling

*S. Pankanti and A. K. Jain*

A correlation-relaxation-labeling framework for computing optical flow—template matching from a new perspective

*O. X. Wu*

Principal component analysis with missing data and its application to polyhedral object matching

*H.-Y. Shum, K. Ikeuchi, R. Reddy*

Active/dynamic stereo vision

*E. Grosso and M. Tistarelli*

Arrangement: a spatial relation between parts for evaluating similarity of tomographic section

*H. D. Tagare, F. M. Vos, C. Jaffe, J. S. Duncan*

### Vol. 17 No. 10

#### Articles

Minpran—a new robust estimator for computer vision

*C. V. Stewart*

Markov random-field models for unsupervised segmentation of textured color images

*D. K. Panjwani, G. Healey*

Person identification using multiple cues

*R. Brunelli and D. Palavigna*

The use of 3-dimensional and 4-dimensional surface harmonics for rigid and nonrigid shape recovery and representation

*A. Matheny and D. B. Goldgof*

Logical/linear operators for image curves

*L. A. Iverson and S. W. Zucker*

Composition of image-analysis processes through object-centered hierarchical planning

*L. G. Gong and C. A. Kilikowski*

Texture classification using noncausal hidden markov-models

*B. R. Powlow and S. M. Dunn*

Optimal  $l(1)$  approximation of the gaussian kernel with application to scale-space construction

*X. P. Li and T. W. Chen*

## Robotica

### Vol. 10 No. 2

#### Articles

Computer-assisted visual perception in teleoperated robotics

*M. Mallen, F. Chavand and E. Cole*

New methods in artificial vision by using entropies of deterministic functions

*G. Jumarie*

Automatic robot program synthesis for assembly

*H. A. ElMaraghy and J. M. Rondeau*

Multivalued coding: Application to autonomous robots

*A. Pruski*

Experimental dual-mode control of a flexible robotic arm

*W. Yim, J. Zuang and S. Singh*

SYM-program environment for manipulator modeling, control and simulation

*A. Timčenko, N. Kirčanski, D. Urošević and*

*M. Vukobratović*

An intelligent part sorting robot in unstructured manufacturing environments

*M. Mehdian and H. Rahnejat*

Derivation of optimal walking motions for a bipedal walking robot

*P. H. Channon, S. H. Hopkins and D. T. Pham*

An algebraic approach to collision-avoidance trajectory planning for dual robot systems: Formulation and optimization

*S. H. Suh and M. S. Kim*

Compliant robotic devices, and electroadhesion

*G. J. Monkman*

#### Special announcement

### Vol. 10 No. 3

#### Reports and surveys

*B. H. Rudall*

Trajectory planning of redundant robots by maximizing the moving acceleration radius

*K. K. K. and Y. S. Yoon*

Continuous path planning via a non-inverting parallel algorithm

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

A real-time algorithm for obstacle avoidance of autonomous middle robots

*H. P. Huang and P. C. Lee*

CAD of devices for gripping prismatic components

*D. T. Pham and E. Tacgin*

Tactile image computation using a feature extraction algorithm

*M. Mehdian*

Kinematic control of planar redundant manipulators by extended motion distribution scheme

*W. J. Chung, W. K. Chung and Y. Youm*

Kinematics of a  $n$ -bay triangle—triangle variable geometry truss manipulator

*L. Beiner*

Computing a manipulator regressor without acceleration feedback

*J. Yuan and Y. Stepanenko*

#### Conference news

#### Book reviews

#### Announcements

### Vol. 10 No. 4

#### Articles

A vibratory sensor for locating parts

*D. T. Pham and M. W. M. G. Dissanyake*

Semi-automatic calibration procedure for the vision-robot interface applied to scale model decoration

*L. G. Trabasso and C. Zielinski*

Real-time determination of a mobile robot's position by linear scanning of a landmark

*J. H. Kim and H. S. Cho*

A geometric approach to manipulator path planning in 3D space in the presence of obstacles

*M. Kirčanski and O. Timčenko*

Conceptual graph-based system for assembly program synthesis

*O. Maimon and A. Kapitanovsky*

Real-time path planning procedure for a whole-sensitive robot arm manipulator

*E. Cheung and V. Lumelsky*

A new wheel control system for the omnidirectional HERMIES-III robot

*D. B. Reister*

Design of robots driven by linear servo systems

*P. Minotti and P. Pracht*

Harmonic drive transmissions: the effects of their elasticity, clearance and irregularity on the dynamic behaviour of an actual SCARA robot

*G. Legnani and R. Faglia*

Algorithms for simple object reconstruction using the largest possible object approach

*E. T. Lee and F. Y. Wu*

#### Congress announcement

**Vol. 10 No. 5****Reports and surveys***B. H. Rudall***Articles**

3D shape and surface colour sensor fusion for robot vision

*R. A. Jarvis*

Application of redundant robots to constrained-motion tasks

*V. Potkonjak*

Learning task strategies in robotic assembly systems

*D. S. Ahn, H. S. Cho, K. Ide, F. Miyazaki and S. Arimoto*

Optimizing motion trajectories of dextrous fingers by dynamic programming technique

*A. Meghdari and H. Sayyaadi*

Efficient computation of force distributions for walking machines on rough terrain

*J. F. Gardner*

An inverse kinematics algorithm for robot manipulators using incremental unit computation method

*S. W. Park and J. H. Oh*

Generalized predictive control of a robotic manipulator with hydraulic actuators

*A. Kotzev, D. B. Cherechas, P. D. Lawrence and N. Sepehri*

Virtual reality and telepresence

*R. Stone***Book reviews****Letter to editor****Announcements****Vol. 10 No. 6****Reports and Surveys***B. H. Rudall***Articles**

Dynamic characteristics of balanced robotic manipulators with joint flexibility

*S. B. Lee and H. S. Cho*

Haptic perception with an articulated, sensate robot hand

*S. A. Stansfield*

A distributed-processing approach for robot dynamics tuning

*A. Y. Zomaya and A. S. Morris*

Efficient sliding mode control for robot manipulator with prescribed tracking performance

*J. J. Lee, J. M. Lee and J. S. Lee*

A graph-searching approach to trajectory planning robots

*W. Jacak, I. Duleba and P. Rogalinski*

Explicit path tracking by autonomous vehicles

*D. H. Shin, S. Singh and J. J. Lee*

Fuzzy qualitative model of a robot sensor for locating three-dimensional objects

*D. T. Pham and K. Hafeez*

Fuzzy logic-based techniques for motion planning of a robot manipulator amongst unknown moving obstacles

*A. Bagchi and H. Hatwal***Letter to editor****Congress announcement****Conference news****Book reviews****Announcements****User modeling and user-adapted interaction****Vol. 4 No. 3****Special issue on user modeling shell systems**

The UM toolkit for cooperative user modeling

*Judy Kay*

Tagus—a user and learner modeling workbench

*Ana Paiva and John Self***Vol. 4 No. 4****Special issue on student modeling**

Preface

*Judy Kay*

Modelling the student in Pitagora 2.0

*Antonella Carbonaro, Vittorio Maniezzo, Marco Roccetti and Paola Salomoni*

Knowledge tracing: modelling the acquisition of procedural knowledge

*Albert T. Corbett and John R. Anderson*

A cognitive load application in tutoring

*Akihiro Kashihara, Tsukasa Hirashima and Jun'ichi Toyoda*