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-- On finding needles in WWW haystacks -- Extending dynamic backtracking for distributed constraint satisfaction problems --Constraint-directed backtracking -- Applied partial constraint satisfaction using weighted iterative repair -- The application of mutual information to the registration of stereo and temporal images of the retina -- Kalman filtering from a phase based optical flow operator --Adaptive constraint restoration and error analysis using a neural network -- Exploring agent cooperation: Studies with a simple pursuit game -- The serializability problem in a parallel rule-based system: A solution by distributed coordination -- Optimal communication among team members -- Dominant and recessive genes in evolutionary systems applied to spatial reasoning -- Using multi-chromosomes to solve a simple mixed integer problem -- Hierarchical and feed-forward fuzzy Logic for financial modelling and prediction -- A knowledgebased system for workflow management using the world wide web --Use of partial functional dependencies to make practical approximate translations among forms of propositional expert systems -- NRDR for the acquisition of search knowledge -- Rapid prototyping of executable problem solving methods using MODEL-ECS -- Preferential semantics for causal fixpoints -- Belief update, the Markovian situation calculus, and discrete event systems -- A notion of correctness with theories containing theoretical terms -- Inductive properties of states --Describing plan recognition as nonmonotonic reasoning and belief revision -- Specification morphisms for nonmonotonic knowledge systems -- Representation results for default logics -- Proving quantified literals in defeasible logic -- Fuzzy hierarchical pattern recognition for robotics applications -- Adaptive curvature-based topography for learning symbolic descriptions of terrain maps -- A computer assisted image analysis system for diagnosing movement disorders -- Vowel recognition for speaker independent Chinese speech recognition -- Beat induction and rhythm recognition --Boosting neural networks in real world applications: An empirical study -- Machine learning of credible classifications -- Mining the knowledge mine -- Using decision trees for agent modelling: A study on resolving conflicting predictions -- Sample set assessment for providing personalised recommendations -- Integrated correction of ill-formed sentences -- Information filtering for context-sensitive browsing --The T-SOM (Tree-SOM) -- Extending and benchmarking the CasPer algorithm -- Disconcepts and fuzzy cognitive maps -- Weight sensitive Boolean extraction produces compact expressions -- Learning temporal sequences in recurrent self-organising neural nets -- Threedimensional scene analysis using multiple range finders — Data capture, coordinate transformations and initial segmentation --Sensor-based robotic automation of mushroom farming — Preliminary considerations -- Creating adroit mechanisms by using large numbers of simple homogeneous structures -- A nephelometric tactile sensor --Finger track — A robust and real-time gesture interface -- A constraint mechanism for knowledge specification of simulation systems based on temporal logic -- Controlling engineering problem solving --Evaluating a qualitative reasoner.

Sommario/riassunto

This book constitutes the refereed proceedings of the 10th Australian Joint Conference on Artificial Intelligence, Al'97, held in Perth, Australia, in November/December 1997. The volume presents 48 revised full papers selected from a total of 143 submissions. Also included are three keynote talks and one invited paper. The book is divided into topical sections on constraint satisfaction and scheduling, computer vision, distributed Al, evolutionary computing, knowledge-based systems, knowledge representation and reasoning, learning and machine vision, machine learning, NLP and user modeling, neural networks, robotics and machine recognition, and temporal qualitative reasoning.