HUDL85 Eva Hudlicka. Knowledge-based fault detection and diagnosis in problem-solving systems. Ph.D. Thesis (in preparation), Dept. of Computer and Information Science, University of Massachusetts, Amherst, Mass. 1985.

LESS83 Victor Lesser and Daniel D. Corkill. The Distributed Vehicle Monitoring Testbed: A tool for investigating distributed problem solving networks. AI Magazine 4(3):15-33, Fall 1983.

Continued from page 37

applied to engineering problems. The editors and their international Editorial Board are well placed to keep you informed in these rapidly developing field. For more details contact

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For a author's toolkit, write to either of the editors or send mail to sriram@cmu-ri-cive.arpa

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Techniques in Knowledge-Based Systems

SGAICO Tutorial
Swiss Group for Artificial Intelligence
and Cognitive Science
SIG of the Swiss Informaticians Society
Swiss Chapter of the ACM

September 30 - October 4, 1985
Lugano, Switzerland

The aim of the tutorial is to provide participants of varying degrees of experience from industrial, commercial, and academic organizations with a thorough grounding in the know-how of expert systems. There will be a general theoretical introduction and five working groups with specific topics, which will provide practical hands-on experience with computers.

Main Speaker William J. Clancey, HPP, Stanford University.

Working Groups:

1. Bob Wielinga and Joost Breuker, University of Amsterdam: Knowledge acquisition (application domains will include banking and finance)
2. John Fox and David Frost, Imperial Cancer Research Fund, London: Applications of expert systems in biology and medicine, natural language and the user interface
3. Thomas Christaller and Franco di Primo, Gesellschaft fuer Mathematik und Datenverarbeitung, Bonn: Tools and shells in expert system construction
4. Christian Pellegrini, Mike Rosner, and Carlo Cecchi, University of Geneva, Switzerland: Programming languages for expert systems LISP
5. Same as above with PROLOG

For more information contact:

SGAICO - P. Shann
ISSCO, University of geneva
54, route do Acacias
CH-1227 Geneve, Switzerland
Tel: (022) 20 93 33 ext. 2116

NEW BOOKS

Qualitative Reasoning about Physical Systems

Edited by Daniel G. Bobrow

1985 - 504pp. - $22.50 Softcover, ISBN 02218-4, MIT Press (Bradford Books series)

This collection of articles, which was featured as a special issue of the Journal of Artificial Intelligence, presents recent work on qualitative reasoning about the real (physical) world. This rapidly developing area of cognitive science, variously called Qualitative or Naive Physics, has strong connections to theories of linguistic semantics. But it also has immediate technological applications -- as a basis for computer programs that reason about physical work.

Contents:

* Qualitative Reasoning about Physical Systems -- An Introduction, D. Bobrow
* A Qualitative Physics Based on Confluences, J. de Kleer and J. S. Brown
* Qualitative Process Theory, K. Forbus
* Common Sense Reasoning about Causality: Deriving Behavior from Structure, B. Kuipers
* How Circuits work, J. de Kleer
* Qualitative Analysis of MOS Circuits, B. C. Williams
* Diagnostic Reasoning Based on Structure and Behavior, R. Davis
* The Use of Design Descriptions in Automated Diagnosis, M. Genesereth
* VERIFY: A Program for Proving Correctness of Digital Hardware Designs, H. Barrow

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Getting Computers to Talk Like You and Me: Discourse Context, Focus, and Semantics

Rachel Reichman

1985 - 144 pp. - $20.00, ISBN 18118-5, MIT Press (Bradford Books Series)

This book makes an important contribution to the study of pragmatics and discourse by presenting an explicit and precise computational approach to the complex problem of the structure of discourse. Reichman first looks at extended person-machine communication, focusing in particular on person-person conversational flow it-

self, then outlines a computer model that describes this phenomenon as an augmented transition network (ATN).

Contents:

* Introduction
* The Need for a Theory of Discourse
* Relations between Discourse Elements
* Conversational Moves
* The Discourse Grammar: Context Space Constituents
* Surface Linguistic Phenomena
* The Grammar: An Abstract Process Module
* Context Space Suspensions and Resumptions
* Cognitive Processing and the Context Space Model
* The Structure of Discourse: On the Generalizability of Discourse Theory
* Linguistic Theory and World: An Integration
* Index

Logic Programming: a Classified Bibliography by I. Balbin, and K. Lecot

This exciting area in computer science is growing very quickly, so quickly in fact, that an overview of its origins, seminal papers, landmark treatises, pioneering articles etc., may be forgotten, or difficult to identify and obtain.

Now, the authors of this comprehensive bibliography of well over 1,600 entries have brought it all together, classed the type of each paper or monograph into one of 18 broad categories. This is somewhat arbitrary, but very useful for those wishing to cover a specific sub-topic. If the item covers more than one category, it is entered in each relevant section.

The bibliography has many other useful features, namely, it's more than twice the size of the one which appeared in Journal of Logic Programming, and is very recent. It also has an author index, and subject index.

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Intelligent Machines: An Introductory Perspective of Artificial Intelligence and Robotics
William B. Gevarter
NASA Ames Research Center

304 pages, $32.95, ISBN 46881-9, Prentice-Hall. Contents: **Part I -- Artificial Intelligence** 1. AI-What it is. 2. What this book will cover. 3. Search-oriented Problem solving and planning techniques. 4. Knowledge representation. 5. Computational logic. 6. Knowledge engineering and expert systems. 7. Planning. 8. Computer vision. 9. Natural language processing. 10. Speech recognition

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Austrian Meeting on Artificial Intelligence

Austrian Society for
Artificial Intelligence
(OGAI)

September 26-27, 1985
Tutorials September 24-25, 1985
University of Vienna

Papers concerning many aspect of AI will be presented and published in the proceedings. Conference languages are English and German.

In addition to the meeting, a one-day tutorial offering an introduction to AI will be held on September 24, and it is possible to visit several tutorials concerning the main fields of AI on September 25. For more details contact the address below.

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For information write:
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Integrating the Information Workplace:
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and speech understanding. 11. Applications of AI. 12. What does it all mean. **Part II - Robotics** 13. What can we call a robot? 14. What can robots do? 15. Primitive functions accomplished by a robot arm. 16. Robot arms. 17. Sensor-controlled robots. 18. Programming a robot. 19. Robot vision techniques. 20. Kinematics and flexure. 21. Robot mobility. 22. Competitive Systems and the State-of-the-art. 23. Research required. 24. Players, research, funding. 25. Applications-now and in the future. 26. The robot and the automated factory. 27. The expanding robot population. 28. robots and the shape of the future. Appendix A. AI languages, tools and computers. Appendix B. A brief history of AI covering its rise, fall, and rebirth. Appendix C. The principal participants. Appendix D. Speech Synthesis.

Industrial Robots:
Computer Interfacing and Control
Wesley E. Snyder
North Carolina State Univ.

352 pages, $32.95, ISBN 46315-8, Prentice-Hall. Contents: Notes to the instructor. 1. Overview of robots. 2. Sensing position and velocity. 3. Noise in digital circuits. 4. Actuators. 5. Control. 6. Robot coordinate systems. 7. Kinematics of position. 8. Differential motions and the Jacobian. 9. Path control. 10. Kinetics. 11. Force control and compliance. 12. Sensors. 13. Computer vision. 14. Computational architectures. 15. Robot programming languages.
