

Cambridge: The Logical Choice

Situated Cognition

On Human Knowledge and Computer Representations

William J. Clancey

This book differs from other purely philosophical treatises in that Clancey, an insider who has built expert systems for twenty years, explores the limitations of existing computer programs and compares them to human memory and learning capabilities. Clancey examines the implications of "situated action" from the perspective of artificial intelligence specialists interested in building robots.

Learning in Doing: Social, Cognitive and Computational Perspectives

1997 c.375 pp. 44400-4 Hardback \$69.95
44871-9 Paperback \$27.95

Computational Learning Theory

M. Anthony and N. Biggs

This text provides a framework for studying a variety of algorithmic processes, such as those currently in use for training artificial neural networks. The authors concentrate on an approximate model for learning and gradually develop the ideas of efficiency considerations. Finally, they consider applications of the theory to artificial neural networks. An abundance of exercises and an extensive list of references round out the text.

Cambridge Tracts in Theoretical Computer Science 30

1997 157 pp. 59922-9 Paperback \$22.95

Technological Innovation

Oversights and Foresights

Raghu Garud, Praveen Nayar, and Zur Shapira, Editors

Technological Innovation addresses specific ways in which the slim odds of corporate success can be enhanced. It analyzes why companies choose certain new technologies, from a technological, economic, and institutional perspective. Based on multidisciplinary research on technological choice, the book bridges research and practice to provide an enlightening and practical study.

1997 385 pp. 55299-0 Hardback \$54.95

Computational and Psychophysical Mechanisms of Visual Coding

Michael Jenkin and Laurence Harris, Editors

Both the biological and computational communities have addressed the task of designing or inferring visual coding strategies. This volume, with chapters by some of the most active contributors in the field of visual coding, describes some of the ingenious mechanisms used to code descriptions of visual phenomena in both areas. These chapters illustrate problems common to both communities and the models and algorithms proposed to solve them.

1997 373 pp. 57104-9 Hardback \$49.95

Basic Proof Theory

A.S. Troelstra and H. Schwichtenberg

This book provides a thorough discussion and comparison of various types of formalization of first-order logic: in particular Hilbert systems, Gentzen systems and natural deduction. The authors give examples of several areas of application, including the metamathematics of pure first-order logic (intuitionistic as well as classical); the theory of logic programming; category theory; modal logic; linear logic; first-order arithmetic; and second-order logic.

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Analyzing Communication in the Workplace to Inform Systems Design

Keith Devlin and Duska Rosenberg

This volume argues that situation theory, a theory of information couched in mathematics, has provided a uniform framework for the investigation of the creative aspects of language use. The authors explore the application of situation theory in the study of language use in everyday communication to improve human/computer interaction.

CSLI Lecture Notes

1997 220 pp. 1-57586-050-3 Hardback \$59.95
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Giovanni Varile and Antonio Zampolli, Editors

Human language technology's main purpose is to allow the use of automatic systems and tools to assist humans in producing and accessing information, to improve communication between humans, and to assist humans in communicating with machines. This book, sponsored by the Directorate General XIII of the European Union and the Information Science and Engineering Directorate of the National Science Foundation, USA, offers the first comprehensive overview of the human language technology field.

Studies in Natural Language Processing

1997 c.530 pp. 59277-1 Hardback \$49.95

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Book

Dym, C.L. (1994). *Engineering design: A synthesis of views*. Cambridge University Press, New York.

Chapter in an edited book

Quinlan, J.R. (1983). Learning efficient classification procedures and their application to chess end games. In *Machine Learning: An Artificial Intelligence Approach*, (Carbonell, J.G., et al., Eds.), Vol. 1, pp. 463-482. Morgan Kaufmann, Los Altos, California.

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Craw, S., & Sleeman, D. (1990). Automating the refinement of knowledge based systems. *Proc. Ninth Europ. AI Conf.*, 167-172.

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