SYSTEMS & CONTROL ENCYCLOPEDIA

Theory, Technology, Applications

Editor-in-Chief

Madan G Singh

UMIST, MANCHESTER, UK

Volume 8
Indexes

SYSTEMS & CONTROL ENCYCLOPEDIA

Theory, Technology, Applications

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INDEXES

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Madan G Singh

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SYSTEMATIC OUTLINE OF THE ENCYCLOPEDIA

The Systematic Outline of the Encyclopedia, which is supplementary to the Subject Index, groups the contents of the Encyclopedia by article title under the main subject headings used in commissioning the Encyclopedia. These headings, which are summarized in the Classified List of Contents below, are further subdivided into appropriate subheadings as each subject dictates. The reader is thus presented with a general overview of the contents of the Encyclopedia. Some articles inevitably relate equally well to more than one heading. Rather than make an arbitrary decision as to which section they belong, each article has been listed wherever appropriate.

Article titles can be located by two methods: (a) by referring to the Classified List of Contents below and then looking up the appropriate Subject Area in the main part of the Analytical List of Contents, or (b) by consulting the Alphabetical List of Contents given overleaf.

The publisher wishes to thank Professor Singh for help in overseeing the collation of the Systematic Outline which was prepared by Danny Dicks, Debbie Puleston and other members of the editorial staff of the Encyclopedia from the original commissioning plans of the Subject Editors.

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Industrial Vision Systems: Segmentation of Gray-Scale Images
Pattern Recognition
Pattern Recognition: Decision-Theoretic Approaches
Pattern Recognition: Syntactic Methods
Scene Analysis, Hierarchical
Thinning Transformations

(*iii*) *General Systems Theory*

(a) Taxonomy of Systems

Adaptive Systems
Anticipatory Systems
Autopoiesis
Behavior Systems
Closed Systems
Data Systems
Directed Systems
Dynamic Systems
Dynamic Systems: A Survey
Effective Systems
Efficient Systems
Epistemological Hierarchy of Systems
General Systems
Goal-Oriented Systems
Learning Systems
Lindenmayer Systems
Linear Systems: General Aspects
Metasystems
Neutral Systems
Petri Nets
Self-Organizing Systems
Self-Reproducing Systems
Source Systems
State-Transition Systems
Structure Systems
Systems
Value Systems

(b) Information Aspects of Systems

Cybernetics
Cybernetics: A Survey
Cybernetics: History
Entropy Minimax Theory
Expert Systems
Expert Systems in Medical Reasoning
Information Laws of Systems
Information Theory
Information Transmission
Law of Requisite Variety
Maximum-Entropy Principle
Possibilistic Information
Pragmatic Information
Semantic Information
Shannon Entropy
U-Uncertainty

(c) Methodological Issues of Systems

Design of Systems
General Systems Problem Solver
Interpretive Structure Modelling
Metamethodology of Systems
Monte Carlo Methods
Multicriteria Decision Making
Q-Analysis
Reconstructability Analysis
Set-Covering Problems

(d) Special Theories

Catastrophe Theory
Information Theory
Linear Systems: General Aspects
Praxiology
Similarity
Stability Theory

(e) Philosophical Issues of Systems

Autology
Causality
Explanation
Holism
Prediction
Reductionism
Retrodiction
Semiotics
Teleology

(f) Computational Aspects of Systems

Artificial Intelligence
Computability
Computational Complexity
Decidability
Turing Machines

(g) General Systems Concepts

Antisymmetric Relations
Chaos
Complexity of Systems
Emergent Properties
Environment of a System
Equivalence Relations
General Systems
Generalized Dependence
Homomorphism of Systems
Intelligence Amplification
Isomorphic Systems
Linear Orderings
Partial Orderings
Partition of a Set
Past Determinancy and Finite Memory
Projections
Quasiorderings
Relational Join
Relations, Mathematical
Reliability of Systems
Set Covers
Simplical Complexes
Symmetric Relations
Systems Interactions
Total Relations

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