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COMPUTATIONAL INTELLIGENCE

Imitating Life

Edited by Jacek M. Zurada, Robert J. Marks II and Charles J. Robinson

The 1994 World Congress on Computational Intelligence (WCCI) held in Orlando, Florida brought together for the first time conferences in the areas of neural networks, fuzzy systems and evolutionary computation — the three main components of computational intelligence. This edited collection of articles on evolutionary computation was prepared especially for this conference. Written by world-renowned experts and pioneers in the field, these articles are grouped into the following categories: Computational Learning Theory, Approximate Reasoning, Evolutionary Computation, Biological Computation and Pattern Recognition, Intelligent Control, Hybrid Computational Intelligence, and Applications.

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EVOLUTIONARY COMPUTATION

Toward a New Philosophy of Machine Intelligence

By David B. Fogel, Natural Selection, Inc.

There are three main areas of research in evolutionary computation: genetic algorithms, evolution strategies and evolutionary programming. Yet, coverage of the field has tended to focus on the narrow area of genetic algorithms, leaving out important contributions made in the other two areas. This book covers all three areas to give you a solid understanding of how simulated evolution can be used to achieve machine intelligence. The history and computational properties of each area are reviewed, and significant experiments in the field are outlined. Throughout, the relationship between learning and evolution is emphasized.

From this book you will learn how to:

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