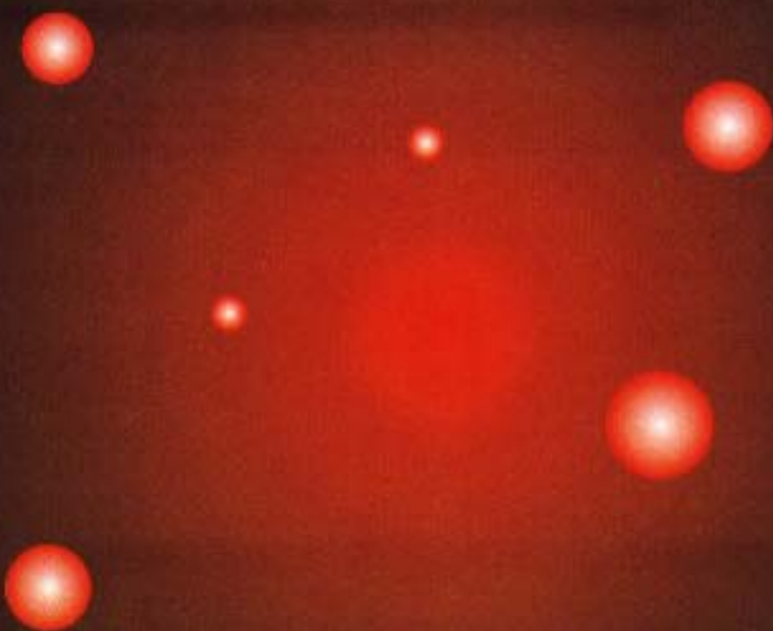


*Wilfried Elmenreich, J. Tenreiro Machado
and Imre J. Rudas (Eds)*

Intelligent Systems

at the Service of Mankind



Volume I

Intelligent Systems at the Service of Mankind

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Edited by
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The "information revolution" of our time permeates the entire lifestyle of our generation. While emerging visions of the "Information Society" with its financial, legal, business and privacy aspects became increasingly prominent during the past few years, the "traditional scene" of information technology, that is industrial automation, preserved its significance as the field of ceaseless development, too.

Since the old-fashioned concept of "Hard Automation" applicable only to industrial processes of fixed, repetitive nature and manufacturing large batches of the same product were thrust to the background by keen market competition, the key element of this development remained the improvement of "Machine Intelligence".

Whenever a variety of products have to be manufactured in small batches and consequently the work-cells of a production line should be quickly reconfigured to accommodate a change in product, hard automation becomes inefficient and fails due to economic reasons. In these cases a new, more flexible way of automation, the so-called "Soft Automation" is expedient and suitable.

In our days the two complementary branches of Machine Intelligence, that is Artificial Intelligence and Computational Intelligence, serve as the basis of Intelligent Engineering Systems. The huge number of scientific results published in Journal and conference proceedings worldwide substantiates this statement. The present book contains several articles taking different viewpoints in the field of intelligent systems. The first chapter comprises five papers on intelligent control. The second chapter gives an insight on intelligent robotics. Following five papers on the subject of intelligent manufacturing systems are presented. The fourth chapter deal with the subjects of data mining and learning systems. Chapter five presents algorithms and methods in the scope of an intelligent system. Chapter six containing seven papers on system modeling conclude the book.

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