Neural Networks, Associative Memories together with Fuzzy Systems and Genetic Algorithms are part of the so called soft computing techniques aimed at providing a machine elements of human-like behaviour such as pattern recognition, learn by examples, function approximation, and so on. In addition to creating human-like-behaving machines, artificial neural networks and associative memories provide a very powerful platform for solving a wide range of complex optimisation problems.

This volume presents 21 carefully selected original research papers on the internal art and craft of neural networks and associative memories: its theoretical foundations, specific techniques and research methodologies. The papers are structures into eight thematic fields:

– Feature Extraction and Dimensionality Reduction.

– Image Processing and Applications.

– Neural Networks and Associative Memories.

– Real World Applications.

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