Foreword

There has been a spurt of activity during the last decade to integrate different computing paradigms such as fuzzy sets, artificial neural networks and genetic algorithms for creating more efficient hybrid systems that can be classified as soft computing methodologies. Here the individual tool acts synergistically, not competitively, for enhancing the application domain of each other. The purpose is to provide flexible information processing systems that can exploit the tolerance for imprecision, uncertainty, approximate reasoning, and partial truth in order to achieve tractability, robustness, low cost solution and close resemblance with human like decision making. Tremendous efforts are being made in this line in order to develop the theories and algorithms in one hand, and demonstrating different applications on the other, considering the tools both individually and in combination.

Computational theory of perceptions (CTP), recently explained by Prof. Zadeh, plays a key role in performing tasks in soft computing framework. Perceptions are imprecise, i.e., both fuzzy and granular, with a granule representing a "clump of objects" in a class that are indistinguishable with respect to a criterion or property. Since rough set theory is reputed for handling uncertainty arising from the granulation of the universe or the feature space, it has recently drawn the attention of researchers to make it applicable in conjunction with other soft computing tools.

The proceedings of HIS-2001, First International Workshop on Hybrid Intelligent Systems, Adelaide, December 11-12, 2001, contains many interesting articles conveying novel ideas underlying the aforesaid concepts and principles of soft computing and CTP. This also includes some real life applications and interactions with conventional techniques of statistical decision theory and information analysis.

The organizers of HIS-2001 and the publisher deserve our profound thanks for bringing out this volume which, I believe, is a must reading for anyone who is not only working in soft computing, but also concerned with any aspect of machine intelligence and real world applications.

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