Preface

The 5th International Workshop on Learning Classifier Systems (IWLCS 2002) was held September 7–8, 2002, in Granada, Spain, during the 7th International Conference on Parallel Problem Solving from Nature (PPSN VII). We have included in this volume revised and extended versions of the papers presented at the workshop.

In the first paper, Browne introduces a new model of learning classifier system, iLCS, and tests it on the Wisconsin Breast Cancer classification problem. Dixon et al. present an algorithm for reducing the solutions evolved by the classifier system XCS, so as to produce a small set of readily understandable rules. Enee and Barbaroux take a close look at Pittsburgh-style classifier systems, focusing on the multi-agent problem known as *El-farol*. Holmes and Bilker investigate the effect that various types of missing data have on the classification performance of learning classifier systems. The two papers by Kovacs deal with an important theoretical issue in learning classifier systems: the use of accuracy-based fitness as opposed to the more traditional strength-based fitness. In the first paper, Kovacs introduces a strength-based version of XCS, called SB-XCS. The original XCS and the new SB-XCS are compared in the second paper, where Kovacs discusses the different classes of solutions that XCS and SB-XCS tend to evolve. Landau et al. compare two approaches aimed at solving non-Markov problems, i.e., the new ATNoSFERES and the extension of XCS with internal memory, XCSM. Llorà et al. introduce a novel model of Pittsburgh-style classifier system in which multiobjective optimization is used to develop solutions that are both accurate and compact. Metivier and Lattaud apply an Anticipatory Classifier System (ACS) enriched with behavioral sequences to tackle non-Markov problems. Vargas et al. discuss the similarities and the differences of Artificial Immune Systems and Learning Classifier Systems, and they show how a mapping between these two approaches can be defined. The volume ends with a complete bibliography of papers related to learning classifier system research, based on Kovacs' on-line bibliography.

This book is the ideal continuation of the three volumes from the previous workshops, published by Springer-Verlag as LNAI 1813, LNAI 1996, and LNAI 2321. We hope it will be a useful support for researchers interested in learning classifier systems and will provide insights into the most relevant topics and the most interesting open issues.

June 2003

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Organization

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