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Carlos Martín-Vide · Miguel A. Vega-Rodríguez · Miin-Shen Yang (Eds.)

Theory and Practice of Natural Computing

9th International Conference, TPNC 2020 Taoyuan, Taiwan, December 7–9, 2020 Proceedings

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Preface

These proceedings contain the papers that were presented at the 9th International Conference on the Theory and Practice of Natural Computing (TPNC 2020), held in Taoyuan, Taiwan, during December 7–9, 2020.

The scope of TPNC is rather broad, including:

- Theoretical contributions to: affective computing, ambient intelligence, ant colony optimization, approximate reasoning, artificial immune systems, artificial life, cellular automata, cognitive computing, cognitive robotics, collective intelligence, combinatorial optimization, computational intelligence, computing with words, developmental systems, DNA computing, evolutionary algorithms, evolutionary computing, evolutionary game theory, fuzzy logic, fuzzy sets, fuzzy systems, genetic algorithms, genetic programming, global optimization, granular computing, heuristics, intelligent agents, intelligent control, intelligent manufacturing, intelligent systems, intelligent user interfaces, machine intelligence, membrane computing, metaheuristics, molecular programming, multi-objective optimization, neural networks, quantum communication, quantum computing, quantum information, quantum metrology, rough sets, soft computing, swarm intelligence, swarm robotics, and unconventional computing.
- Applications of natural computing to: algorithmics, bioinformatics, cryptography, design, economics, graphics, hardware, human-computer interaction, knowledge discovery, learning, logistics, medicine, natural language processing, pattern recognition, planning and scheduling, programming, telecommunications, and web intelligence.

TPNC 2020 received 24 submissions and the papers were reviewed by three Program Committee members. There were also a few external reviewers consulted. After a thorough and vivid discussion phase, the committee decided to accept 12 papers (which represents an acceptance rate of 50%). The conference program also included three invited talks as well as some presentations of work in progress.

The excellent facilities provided by the EasyChair conference management system allowed us to deal with the submissions successfully and handle the preparation of these proceedings in time.

We would like to thank all invited speakers and authors for their contributions, the Program Committee and the external reviewers for their cooperation, and Springer for its very professional publishing work.

September 2020

Carlos Martín-Vide
Miguel A. Vega-Rodríguez
Miin-Shen Yang

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TPNC 2020 was organized by the Chung Yuan Christian University, from Taoyuan, Taiwan, and the Institute for Research Development, Training and Advice (IRDTA), from Brussels, Belgium, and London, UK.

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