

Contents

Invited Papers

The Unconventionality of Nature: Biology, from Noise to Functional Randomness	3
<i>Barbara Bravi and Giuseppe Longo</i>	
Ultrametric Algorithms and Automata	35
<i>Rūsiņš Freivalds</i>	
Realism and Texture: Benchmark Problems for Natural Computation.	53
<i>John P. Lewis</i>	
Quantum Computing Meets the Real World	66
<i>Kristen L. Pudenz</i>	
BL: A Visual Computing Framework for Interactive Neural System Models of Embodied Cognition and Face to Face Social Learning	71
<i>Mark Sagar, Paul Robertson, David Bullivant, Oleg Efimov, Khurram Jawed, Ratheesh Kalarot, and Tim Wu</i>	
Computations with Grossone-Based Infinities	89
<i>Yaroslav D. Sergeyev</i>	

Regular Papers

Exploring the Effect of Cell Heterogeneity in Wound Healing Using a 3D Multicellular Tissue Growth Model	109
<i>Belgacem Ben Youssef</i>	
Regularized Linear and Nonlinear Autoregressive Models for Dengue Confirmed-Cases Prediction	121
<i>Larissa Braz Sousa, Claudio J. Von Zuben, and Fernando J. Von Zuben</i>	
Asynchronous Spiking Neural P Systems with Structural Plasticity	132
<i>Francis George C. Cabarle, Henry N. Adorna, and Mario J. Pérez-Jiménez</i>	
Expressive Power of Non-deterministic Evolving Recurrent Neural Networks in Terms of Their Attractor Dynamics	144
<i>Jérémie Cabessa and Jacques Duparc</i>	

Duplications and Pseudo-Duplications	157
<i>Da-Jung Cho, Yo-Sub Han, Hwee Kim, Alexandros Palioudakis, and Kai Salomaa</i>	
Going Beyond Turing with P Automata: Partial Adult Halting and Regular Observer ω -Languages.	169
<i>Rudolf Freund, Sergiu Ivanov, and Ludwig Staiger</i>	
DiSCUS: A Simulation Platform for Conjugation Computing	181
<i>Angel Goñi-Moreno and Martyn Amos</i>	
A Cost/Speed/Reliability Tradeoff to Erasing	192
<i>Manoj Gopalkrishnan</i>	
Replication of Arbitrary Hole-Free Shapes via Self-assembly with Signal-Passing Tiles	202
<i>Jacob Hendricks, Matthew J. Patitz, and Trent A. Rogers</i>	
Efficient Card-Based Protocols for Generating a Hidden Random Permutation Without Fixed Points.	215
<i>Rie Ishikawa, Eikoh Chida, and Takaaki Mizuki</i>	
Simulation of the 2JLP Gene Assembly Process in Ciliates	227
<i>Md. Sowgat Ibne Mahmud and Ian McQuillan</i>	
A Uniform Family of Tissue P Systems with Protein on Cells Solving 3-Coloring in Linear Time	239
<i>T. Mathu, Hepzibah A. Christinal, and Daniel Díaz-Pernil</i>	
Asynchronous Dynamics of Boolean Automata Double-Cycles	250
<i>Tarek Melliti, Mathilde Noual, Damien Regnault, Sylvain Sené, and Jérémy Sobieraj</i>	
Non-cooperative Algorithms in Self-assembly.	263
<i>Pierre-Étienne Meunier</i>	
Tangle Machines.	277
<i>Daniel Moskovich and Avishy Y. Carmi</i>	
Formalisation vs. Understanding: A Case Study in Isabelle.	290
<i>Declan Thompson</i>	
Author Index	301

<http://www.springer.com/978-3-319-21818-2>

Unconventional Computation and Natural Computation
14th International Conference, UCNC 2015, Auckland,
New Zealand, August 30 -- September 3, 2015,
Proceedings
Calude, C.S.; Dinneen, M. (Eds.)
2015, X, 301 p. 58 illus., Softcover
ISBN: 978-3-319-21818-2