REPORT ON NMCA 2010

The 2nd Workshop on Non-Classical Models of Automata and Applications
23–24 August 2010, Jena

Manfred Kudlek

The second Workshop Non-Classical Models of Automata and Applications (NCMA 2010) was held in Jena, from August 23 to 24, 2010, in connection with CMC11 (CMC 2010).

The organizing committee consisted of Henning Bordihn, Rudolf Freund, Thomas Hinze, Markus Holzer, Martin Kutrib, and Friedrich Otto.

Sponsors were DFG (Deutsche Forschungsgemeinschaft), and partially also Institut für Computersprachen, Technische Universität Wien.

NCMA 2010 was attended by 24 participants from 10 countries, as given in the following table:

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The scientific program consisted of 2 invited talks and 11 contributions, selected from 16 submissions (another one was withdrawn), as given below.

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NCMA 2010 was opened on Monday morning by Martin Kutrib, introducing the history of NCMA and giving information on program, facilities and social program.

With the first invited lecture ‘Survey: Tree Transducers in Machine Translation’, well presented, Andreas Maletti, starting with examples from mp3 and Google, gave a good survey on the history of machine translation (phrase, segment, syntax oriented), machine translation, tree transducers, top-down tree transducers, and their properties as expressiveness, symmetry, regularity preservation, and closure under composition.

Tomasz Jurdziński, with the second one ‘Growing Grammars and Length-reducing Automata’, presented a very good and interesting overview on the gap between CFL and CSL, namely growing CS grammars, their deterministic version, Church Rosser languages, and the relations between them, as well as separating examples. Unfortunately there is only a short abstract in the proceedings.
The Bulletin of the EATCS

To mention are also the good and interesting presentations by Martin Hu-
schenbett on a Kleene-Schützenberger theorem for trace series over bounded
lattices, by Peter Leupold on McNaughton families of languages specified by
monadic string-rewriting systems, by György Vaszil on pushdown automata reg-
ulated by blackhole states, by Maxime Senot on signal machines and their relation
to cellular automata, and the very good one by Maria Paola Bianchi on classes
of DFA’s, NFA’s, PFA’s over a unary alphabet.

The workshop was partially closed by Rudolf Freund on Tuesday noon, an-
nouncing next DCFS, DLT, and NCMA.

In the afternoon there were two invited talks, and a session ‘Spiking Neural P
Systems’, common with CMC11.

The first invited lecture, ‘Cellular Automata and the Quest for Artificial Self-
Reproducing’, presented by Martin Kutrib (coauthor Markus Holzer), was an
excellent survey on fundamental questions (logical universality, constructibility,
construction-universality, self-reproduction, evolution), the birth of cellular au-
tomata (Ulam, von Neumann, homogeneity, neighbourhoods, Conway’s game
of life, necessary and sufficient properties for self-reproduction), non-trivial self-
reproduction, Herman’s and Langdon’s cellular automata), Conway’s game of life
(glider, glider gun, simulation of logical gates), synchronization (firing squad),
and signals.

After this talk Rudolf Freund officially closed NCMA 2010.

Gabriel Ciobanu (coauthor Bogdan Aman), with the second one ‘Mobility
in Computer Science and in Membrane Systems’, dedicated to the memory of
Robin Milner, gave a good and interesting overview on mobility in CS (π cal-
culus, mobile ambients, mobile agents), mobility in brane systems, safe encoding
of mobile ambients by mobile membranes, and mutual membranes with objects
on surface. At the beginning, as a surprise, he presented to Gheorghe Păun, for
his 60th birthday in 2010, a book Membrane Computing - Biologically Inspired
Process Calculi, containing articles collected by him and students from Iași. Un-
fortunately, for both invited talks there are only short abstracts in the proceedings
of CMC11.

To mention are also the good and interesting presentations by Marian Kogler
on computationally complete spiking neural P systems, and by Turlough Neary
on a universal spiking neural P system with 11 neurons. Hendrik Jan Hooge-
boom introduced Rudi Freund to introduce himself.

The proceedings, edited by the organizing committee, containing the invited
talks and all contributions, although that of Tomasz Jurziński only as abstract,
have been published as Band 263 of Österreichische Computer Gesellschaft.
The proceedings of CMC11, edited by Marian Gheorghe, Thomas Hinze, and
Gheorghe Păun, have been published by Friedrich Schiller Universität Jena.
In the breaks coffee, tea juice, mineral water, fruits, and snacks were offered. The social program of the workshop consisted of a dinner in Zur Noll, a nice restaurant in the traditional part of Jena.

Weather was warm with high temperatures 20 to 25°C, but with some showers.

NCMA 2010 (and also CMC11) was well organized, in a relaxed atmosphere. Next NCMA will be held at Università degli Studi di Milano (not Bicocca!), most probably from July 17-18, 2011.