Antoni Mazurkiewicz — half a century of inspirational research

This special issue of Fundamenta Informaticae is honoring Prof. Antoni Mazurkiewicz, who in 2006 celebrated 50 years of employment in the academic world. Not many scientists have a chance to celebrate such an anniversary! Moreover, it must be stressed here that this issue celebrates a scientist who is still scientifically very active pursuing genuinely innovative research.

Prof. Mazurkiewicz has made fundamental contributions to theoretical computer science. He is best known for inventing the theory of traces, which became one of the cornerstones of the theory of concurrency. During his long scientific career Prof. Mazurkiewicz has significantly contributed to many research areas including the theory of programming, models of concurrent and distributed systems, (de)composition methods for Petri nets, algorithms on graphs, synchronizing networks, and concurrent and asynchronous algorithms. His ideas have inspired many scientists all over the world. He had a tremendous influence on the development of theoretical computer science in Poland. Many of his former Ph.D. students became research leaders and today hold professorships at universities in Poland and abroad, pursuing research inspired by ideas of their mentor.

We were very pleased with the overwhelming response to our invitation to contribute to this special issue - this response reflects the respect that Prof. Mazurkiewicz enjoys in the scientific community. As a result, this volume contains 14 contributions exploring a number of research streams that are either directly or indirectly related to ideas of Prof. Mazurkiewicz. The contributions span a whole spectrum of research themes. More specifically, the contributions cover the following topics: first order fragments of Mazurkiewicz traces (Volker Diekert, Martin Horsch, and Manfred Kufleitner), preserving structural and behavioural properties by composing net systems on interfaces (Luca Bernardinello, Elena Monticelli, and Lucia Pomello), formalising TCP's data transfer service language using a symbolic automaton (Jonathan Billington and Ben Han), structure theory and concurrent behaviour of Petri nets (Eike Best, Philippe Darondeau, and Harro Wimmela), unifying language for spatial structures (Giovanni Conforti, Damiano Macedonio, and Vladimiro Sassone), finitary compositions of two-way finite-state transductions (Joost Engelfriet and Hendrik Jan Hoogeboom), program verification by symbolic calculation of relations (Jacques Carette and Ryszard Janicki), communicating automata with bounded channels (Blaise Genest, Dietrich Kuske, and Anca Muscholl), uniform satisfiability in PSPACE for local temporal logics over Mazurkiewicz traces (Paul Gastin and Dietrich Kuske), processes of nets with range arcs (Jetty Kleijn and Maciej Koutny), an efficient message passing election algorithm based on Mazurkiewicz's algorithm (Jérémie Chalopin and Yves Métivier), minimal rules for the most part of

binary information systems (Mikhail Ju. Moshkov, Andrzej Skowron, and Zbigniew Suraj), ethics of Mazurkiewicz traces (Edward Ochmański and Joanna Pieckowska), the decent philosophers (Wolfgang Reisig), process-algebraic verification of asynchronous circuits (Xu Wang and Marta Kwiatkowska), a framework for modelling behaviours of hybrid systems (Józef Winkowski).

All the papers went through a thorough refereeing procedure. We would like to thank all the contributors and the referees for their cooperation in producing this issue. As a result, we believe that we have produced a volume that reflects well current research in concurrent and distributed systems. We trust that this issue will please its readers, and in particular that it will please Prof. Mazurkiewicz.

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