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EDITOR'S FOREWORD

The twentieth International Colloquium on Automata, Languages and Programming (ICALP) was held at Lund University, Sweden, in July 1993. Over 150 people attended the conference and 51 contributed papers were presented. Invited lectures were given by Manuel Blum, Lane Hemachandra, Danny Dolev, Imre Simon and Serge Abiteboul.

This special issue of Nordic Journal of Computing presents the final versions of five papers selected from ICALP'93. These papers have undergone the normal refereeing process. They represent two central areas of computer science: computational complexity and semantics.

The two first papers in this issue address the topic of approximating hard combinatorial problems. Madhav Marathe, Harry Hunt III and S. Ravi show many PSPACE-hard problems for hierarchically specified graphs to admit polynomial time approximation algorithms. In contrast, they show that unless $P = PSPACE$, there don't exist polynomial time approximation algorithms for several other problems of this type. Next, Viggo Kann shows three natural problems to be complete for a class of minimization problems under approximation preserving reduction. In result, he can conclude that they cannot be approximated within n^{ϵ}, $0 < \epsilon$, in polynomial time unless $P = NP$.

The third computational complexity paper in this issue is concerned with the problem of reliable broadcasting in a communication network under independent link and node failures. Bogdan Chlebus, Krzysztof Diks and Andrzej Pelc provide a class of sparse networks and probabilistically safe broadcasting algorithms for such networks running in logarithmic time.

The special issue closes with two semantic papers. Klaus Havelund and Kim Larsen present a new theory of parallel communicating systems called the Fork Calculus. It essentially differs from CCS in the way processes are put in parallel. Then, Hardi Hungar and Bernhard Steffen provide an efficient method for deciding whether a given context free process satisfies a property formulated in the alternation-free modal mu-calculus.

I would like to thank all the referees of this special issue for their anonymous work. Also, I would like to thank Esko Ukkonen for making the pages available to these five papers, and Mogen Nielsen who *de facto* was co-editor of this issue responsible for the semantic papers.

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