

# Lecture Notes in Computer Science

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# Logic and Computational Complexity

International Workshop LCC '94  
Indianapolis, IN, USA, October 13-16, 1994  
Selected Papers



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## Preface

The synergy between logic and computational complexity has gained importance and vigor in recent years, cutting across areas such as proof theory, finite model theory, computation theory, applicative programming, database theory, and philosophical logic. This volume is the outcome of a Workshop on Logic and Computational Complexity (LCC), organized to bring together researchers in this growing interdisciplinary field, so as to foster and enhance collaborations and to facilitate the discovery of conceptual bridges and unifying principles.

The workshop was held at the Indiana University Conference Center in Indianapolis, from the 13th to the 16th of October, 1994. Forty-one talks were presented at the meeting. The papers in this volume are revised versions of the workshop papers, or closely related to them. Jean-Yves Girard, Stephen Lindell and Anil Seth were unable to attend, but included their intended contribution in this volume. On the other hand, a number of speakers could not contribute to this volume, for various reasons: Maria Bonet, Philip Bradford, Kevin Compton, Stephen Cook, Alexandar Ignjatovic, Neil Immerman, Phokion Kolaitis, Harry Mairson, Yiannis Moschovakis, Jim Otto, Toni Pitassi, Andre Scedrov, Wilfried Sieg, Alexei Stolboushkin, Alasdair Urquhart, Dirk Van Gucht, Moshe Vardi, and Victor Vianu. Other participants who graciously agreed to chair sessions were Serge Abiteboul, Paris Kanellakis, Julia Knight, Larry Moss, Jim Royer, and Jouko Vaananen.

The papers in this volume are grouped by themes, but the frequent difficulty of classifying papers demonstrates in itself the close relations between various approaches. While contributions were not refereed, an editorial effort has been made to provide authors with informal feedback from readers, which in many cases proved indeed to be very constructive. With apologies to the many whose help has not been properly recorded, I would like to thank for their feedback Stephen Bellantoni, Stephen Bloch, Sam Buss, Peter Clote, Anuj Dawar, Georg Gottlob, Hagen Huwig, Paris Kanellakis, Max Kelly, Phokion Kolaitis, Julia Knight, Janos Makowsky, Anil Nerode, Helmut Schwichtenberg, Philip Scott, Robert Seely, Alasdair Urquhart, Moshe Vardi, and Victor Vianu.

LCC was organized with help from my Indiana University colleague and friend Larry Moss, to whom I am most grateful. The meeting could not have taken place without generous grants from the Office of Naval Research, the National Science Foundation, the Indiana University Interdisciplinary Venture Fund, and the Dean of the Indiana University School of Arts and Sciences. Speaking for all participants, I am sincerely obliged to these supporters, not only for their generosity, but also for their show of confidence in the significance of this growing research community.

Daniel Leivant  
Indiana University  
May 1995

# Table of Contents

## FOUNDATIONAL ISSUES

Strict Finitism and Feasibility <i>Felice Cardone</i>	1
Logical Omniscience <i>Rohit Parikh</i>	22
On Feasible Numbers <i>Vladimir Yu. Sazonov</i>	30

## APPLICATIVE AND PROOF THEORETIC COMPLEXITY

On Parallel Hierarchies and $R_k^i$ <i>Stephen Bloch</i>	52
Program Extraction from Classical Proofs <i>Ulrich Berger and Helmut Schwichtenberg</i>	77
Computational Models and Function Algebras <i>Peter Clote</i>	98
Expressing Computational Complexity in Constructive Type Theory <i>Robert L. Constable</i>	131
Light Linear Logic <i>Jean-Yves Girard</i>	145
Intrinsic Theories and Computational Complexity <i>Daniel Leivant</i>	177

## COMPLEXITY OF PROOFS

On Herbrand's Theorem <i>Samuel R. Buss</i>	195
Some Consequences of Cryptographical Conjectures for $S_2^1$ and $EF$ <i>Jan Krajíček and Pavel Pudlák</i>	210
Frege Proof System and $TNC^\circ$ <i>Gaisi Takeuti</i>	221

## COMPUTATIONAL COMPLEXITY OF FUNCTIONALS

Characterizing Parallel Time by Type 2 Recursions With Polynomial Output Length <i>Stephen J. Bellantoni</i>	253
Type 2 Polynomial Hierarchies <i>Anil Seth</i>	269
The Hierarchy of Terminating Recursive Programs over $\mathbf{N}$ <i>Stanley S. Wainer</i>	281

## COMPLEXITY AND MODEL THEORY

Feasibly Categorical Models <i>Douglas Cenzer and Jeffrey B. Remmel</i>	300
Metafinite Model Theory <i>Erich Grädel and Yuri Gurevich</i>	313
Automatic Presentations of Structures <i>Bakhadyr Khoussainov and Anil Nerode</i>	367

## FINITE MODEL THEORY

A Restricted Second Order Logic for Finite Structures <i>Anuj Dawar</i>	393
Comparing the Power of Monadic NP Games <i>Ronald Fagin</i>	414
Linear Constraint Query Languages: Expressive Power and Complexity <i>Stéphane Grumbach, Jianwen Su, and Christophe Tollu</i>	426
A Constant-Space Sequential Model of Computation for First-Order Logic <i>Steven Lindell</i>	447
Logics Capturing Relativized Complexity Classes Uniformly <i>J.A. Makowsky and Y.B. Pnueli</i>	463
Preservation Theorems in Finite Model Theory <i>Eric Rosen and Scott Weinstein</i>	480
A Query Language for NC <i>Dan Suciu and Val Breazu-Tannen</i>	503