

**Eighteenth Annual IEEE  
Symposium on  
Logic in Computer Science**

**June 22–25, 2003**

**Ottawa, Canada**

Sponsored by

*IEEE Technical Committee on  
Mathematical Foundations of Computing*

**IEEE COMPUTER SOCIETY**

with support from

*Fields Institute for Research in Mathematical  
Sciences*

*Le Centre de Recherches Mathématiques (CRM)*

*University of Ottawa/Université d'Ottawa*

In cooperation with

*Association for Symbolic Logic (ASL)*

*European Association for Theoretical Computer  
Science (EATCS)*

## Conference Program

All sessions will be held in Room H0104 (Floor 0) of the SITE building (number 4 on the campus map).

SATURDAY, June 21

**Reception** (19:00–21:00)

SUNDAY, June 22

**Session 1** (9:00–10:30)

Chair: Philip Scott

OPENING REMARKS: Samson Abramsky, LICS General Chair

*Proof Nets for Unit-Free Multiplicative-Additive Linear Logic*, Dominic Hughes and Rob van Glabbeek

*About Translations of Classical Logic into Polarized Linear Logic*, Olivier Laurent and Laurent Regnier

*System  $ST\beta$ -Reduction and Completeness*, Christophe Raffalli

**Coffee Break** (10:30–11:00)

**Session 2** (11:00–12:30)

Chair: Luke Ong

TUTORIAL: *Types and Programming Languages: The Next Generation*, Benjamin Pierce

**Lunch** (12:30–14:00)

**Session 3** (14:00–15:30)

Chair: Frank Pfenning

*Reasoning about Hierarchical Storage*, Amal Ahmed, Limin Jia, and David Walker

INVITED TALK: *Formal verification at Intel*, John Harrison

**Coffee Break** (15:30–16:00)

**Session 4** (16:00–17:30)

Chair: Paul-André Melliès

*New Directions in Instantiation-Based Theorem Proving*, Harald Ganzinger and Konstantin Korovin

*Abstract Saturation-Based Inference*, Nachum Dershowitz and Claude Kirchner

*Orienting Equalities with the Knuth-Bendix Order*, Konstantin Korovin and Andrei Voronkov

**Short Presentations Session 1** (18:00–19:00)

Chair: Philip Scott

*Practical Reflection in Nuprl*, Eli Barzilay, Stuart Allen, and Robert Constable

*An Applicative-Order Term Rewriting System for Code Generation, and Its Termination Analysis*, Oleg Kiselyov

*Patterns Based on Multiple Interacting Partial Orders*, Frank J. Oles

*Logic of Subtyping*, Pavel Naumov

*A Language and a Notion of Truth for Cryptographic Properties*, Simon Kramer

*The Relative Complexity of Local Search Heuristics and the Iteration Principle*, Tsuyoshi Morioka

*A Second-Order Theory for NL*, Stephen Cook and Antonina Kolokolova

MONDAY, June 23

**Session 5** (9:00–10:30)

Chair: Marcelo Fiore

*Dependent Intersection: A New Way of Defining Records in Type Theory*, Alexei Kopylov

*Structural Subtyping Non-Recursive Types is Decidable*, Viktor Kuncak and Martin Rinard

*On Program Equivalence in Languages with Ground-Type References*, Andrzej S. Murawski

**Coffee Break** (10:30–11:00)

**Session 6** (11:00–12:30)

Chair: Amy Felty

*A Proof Theory for Generic Judgments*, Dale Miller and Alwen Tiu

*Polynomial-Time Algorithms from Ineffective Proofs*, Paulo Oliva

*The Complexity of Resolution Refinements*, Joshua Buresh-Oppenheim and Toniann Pitassi

**Lunch** (12:30–14:00)

**Session 7** (14:00–15:30)

Chair: Phokion Kolaitis

*Successor-Invariance in the Finite*, Benjamin Rossman

INVITED TALK: *Will Deflation Lead to Depletion? On Non-Monotone Fixed Point Inductions*, Erich Grädel

**Coffee Break** (15:30–16:00)

**Session 8** (16:00–17:30)

Chair: Martin Otto

*Automatic Partial Orders*, Bakhadyr Khoussainov,  
Sasha Rubin, and Frank Stephan

*Logical Definability and Query Languages over Un-  
ranked Trees*, Leonid Libkin and Frank Neven

*Query Evaluation on Compressed Trees*, Markus Frick,  
Martin Grohe and Christoph Koch

**Business Meeting** (17:45–19:15)

TUESDAY, June 24

**Session 9** (9:00–10:30)

Chair: Martin Otto

*Revisiting Digitization, Robustness, and Decidability  
for Timed Automata*, Joel Ouaknine and James Wor-  
rell

*Satisfiability in Alternating-time Temporal Logic*,  
Govert van Drimmelen

*Bisimilarity on Basic Parallel Processes is PSPACE-  
complete*, Petr Jančar

**Coffee Break** (10:30–11:00)

**Session 10** (11:00–12:30)

Chair: Samson Abramsky

TUTORIAL: *Logic in Access Control*, Martin Abadi

**Lunch** (12:30–14:00)

**Session 11** (14:00–15:30)

Chair: Prakash Panangaden

*The Planning Spectrum - One, Two, Three, Infinity*,  
Marco Pistore and Moshe Y. Vardi

INVITED TALK: *Advice about Logical AI*, John Mc-  
Carthy

**Coffee Break** (15:30–16:00)

**Session 12** (16:00–17:15)

Chair: Alan Jeffrey

*A Sound Framework for Untrusted Verification-Con-  
dition Generators*, George C. Necula and Robert R.  
Schneck

*An NP Decision Procedure for Protocol Insecurity with  
XOR*, Yannick Chevalier, Ralf Küsters, Michael Rusi-  
nowitch, and Mathieu Turuani

*Intruder Deductions, Constraint Solving and In-  
security Decision in Presence of Exclusive Or*,  
Hubert Comon-Lundh and Vitaly Shmatikov

**Banquet** (19:00–)

WEDNESDAY, June 25

**Session 13** (9:00–10:30)

Chair: Andreas Blass

*Spectrum Hierarchies and Subdiagonal Functions*,  
Aaron Hunter

*Spectra of Monadic Second-Order Formulas with One  
Unary Function*, Yuri Gurevich and Saharon Shelah

*Convergence Law for Random Graphs with Specified  
Degree Sequence*, James F. Lynch

**Coffee Break** (10:30–11:00)

**Session 14** (11:00–12:30)

Chair: Phokion Kolaitis

*Homomorphism Closed vs. Existential Positive*,  
Tomas Feder and Moshe Y. Vardi

*Tractable Conservative Constraint Satisfaction Prob-  
lems*, Andrei A. Bulatov

*A Constraint-Based Presentation and Generalization  
of Rows*, Francois Pottier

**Lunch** (12:30–14:00)

**Session 15** (14:00–15:30)

Chair: Ursula Martin

*Labelled Markov Processes: Stronger and Faster Ap-  
proximations*, Vincent Danos and Josée Desharnais

INVITED TALK: *Model Checking for Probability and  
Time: From Theory to Practice*, Marta Z. Kwiatkowska

**Coffee Break** (15:30–16:00)

**Session 16** (16:00–15:30)

Chair: Alan Jeffrey

*Model Checking Guarded Protocols*, E. Allen Emerson  
and Vineet Kahlon

*Model-Checking Trace Event Structures*, P. Madhusu-  
dan

*Micro-Macro Stack Systems – A New Frontier of De-  
cidability for Sequential Systems*, Nir Piterman and  
Moshe Y. Vardi

**Short Presentations Session 2** (18:00–19:00)

Chair: Andreas Blass

*A Proposal to Extend Abstract State Machines to Ap-  
plications in Systems Biology*, James F. Lynch

*Stuttering Refinement on Partial Systems*, Shiva Ne-  
jati and Arie Gurfinkel

*Assume-Guarantee Reasoning with Features*, Benet  
Devereux

*Modularity Theorems for Non-Monotone Induction*,  
Marc Denecker and Eugenia Ternovska

*Linear-Time Algorithms for Monadic Logic*, Steven  
Lindell

*Game-Based Notions of Locality*, Marcelo Arenas,  
Pablo Barcelo, and Leonid Libkin

*Arb: An Implementation of Selecting Tree Automata  
for XML Query Processing*, Martin Grohe, Christoph  
Koch

**End of Conference.**

## Reception

An opening reception will be held Saturday evening, June 21, 19:00-21:00 in the SITE building, Floor 0 (number 4 on the campus map), near the King Edward entrance.

## Registration Desk

The registration desk for LICS and Affiliated Workshops is on Floor 0 of the SITE building near the King Edward entrance. The hours of operation are Saturday 8:30–17:30 and 19:00–21:00; Sunday–Wednesday from 8:30 until the end of the last session; Thursday and Friday 8:30–17:30.

## Workshops

All workshops will be held on Floor 0 of the SITE building (number 4 on the campus map).

*Probability in AI*, June 21: SITE Room C0136.

*Typical Case Complexity and Phase Transitions*, June 21: SITE Room F0126.

*Logic and Computational Linguistics*, June 26: SITE Room F0126.

*Causality in Computer Science and Physics*, June 26: SITE Room C0136.

*Foundations of Computer Security*, June 26–27: SITE Room A0150.

*Implicit Computational Complexity*, June 26–27: SITE Room G0103.

## Banquet

The conference banquet will be held on Tuesday, June 24, at 19:00 at the Asticou Restaurant of the Canadian Museum of Civilization in Gatineau (across the river from Ottawa, marked number 8 on the area map). The address is 100 Laurier Street, Gatineau, Quebec. The museum is easily accessible from campus by foot, bus, taxi, or by car and has on-site parking. Directions will be provided.

## Conference Organization

**LICS General Chair:** Samson Abramsky (U. of Oxford).

**2003 Conference Co-chairs:** Amy Felty & Philip Scott (U. of Ottawa).

**2003 Program Chair:** Phokion G. Kolaitis (UC Santa Cruz).

**2003 Workshops Chair:** Prakash Panangaden (McGill U.).

**Publicity Chair:** Alex Simpson (U. of Edinburgh).

**Program Committee:** Michael Benedikt (Bell Laboratories), Andreas R. Blass (U. of Michigan), Maria Luisa Bonet (UPC, Barcelona), Witold Charatonik (U. of Wroclaw), Marcelo Fiore (U. of Cambridge), Giorgio Ghelli (U. di Pisa), Thomas A. Henzinger (UC Berkeley), Alan Jeffrey (DePaul U.), Assaf J. Kfoury (Boston U.), Phokion G. Kolaitis (UC Santa Cruz), Orna Kupferman (Hebrew U. of Jerusalem), Ursula Martin (Queen Mary U. of London), Paul-André Melliès (CNRS & U. Paris 7), Eugenio Moggi (U. di Genova), Ugo Montanari (U. di Pisa), Paliath Narendran (U. at Albany SUNY), Luke Ong (U. of Oxford & Nat. U. of Singapore), Martin Otto (U. of Wales Swansea), Frank Pfenning (Carnegie Mellon U.), Mirek Truszczynski (U. of Kentucky).

**Organizing Committee:** M. Abadi, S. Abramsky (chair), R. Constable, N. Dershowitz, A. Felty, H. Ganzinger, H. Gabow, J. Halpern, U. Kohlenbach, P.G. Kolaitis, D. Leivant, G. Longo, H. Mairson, J. Mitchell, E. Moggi, M. Nielsen, G. Plotkin, V. Pratt, S. Ronchi della Rocca, P.J. Scott, R. Shore, A. Simpson, I.A. Stewart, J. Tiuryn, M.Y. Vardi, G. Winskel.