Program of ISMVL-2010

Wednesday, May 26th

8:30-9:00 Registration

9:00-9:15 Opening Session

9:15-10:15 Invited Talk  (Chair: Mitch Thornton)
   Spectral Techniques: The First Decade of the XXI Century
   Claudio Moraga

10:25-11:35
Session A: Mathematical Fuzzy Logic 1 (Chair: Félix Bou)
   • Generating the Variety of SMV-Algebras
     Antonio Di Nola, Tommaso Flaminio
   • Note on Construction of Probabilities on Many-valued Events via
     Schauder Bases and Inverse Limits
     Tomas Kroupa
   • Schauder Hats for the Two-Variable Fragment of BL
     Stefano Aguzzoli, Simone Bova

Session B: VLSI-Architecture (Chair: Marek Perkowski)
   • A Comparison of Architectures for Various Decision Diagram
     Machines
     Hiroki Nakahara, Tsutomu Sasao, Munehiro Matsuura
   • One-Color Two-Phase Asynchronous Communication Links Based on
     Multiple-Valued Simultaneous Control
     Atsushi Matsumoto, Naoya Onizawa, Takahiro Hanyu
   • Low Voltage Semi Floating-Gate Binary to Multiple-Value and
     Multiple-Value to Binary Converters
     Yngvar Berg

COFFEE BREAK

11:55-13:30
Session A: SAT+Tutorial (Chair: Gernot Salzer)
   • Finding Attractors in Synchronous Multiple-Valued Networks Using
     SAT-based Bounded Model Checking
     Elena Dubrova, Maxim Teslenko, Liu Ming
   • New Insights into Encodings from MaxCSP into Partial MaxSAT
     Josep Argelich, Alba Cabiscol, Inês Lynce, Felip Manyà
   • Non-Deterministic Multi-Valued Logics - A Tutorial
     Arnon Avron, Anna Zamansky
Session B: Fuzzy Logic and Soft Computing (Chair: Lluís Godo)
  • Truth-Functionality, Rough Sets and Three-Valued Logics
    Davide Ciucci, Didier Dubois
  • Reconstruction of Additive Generators from Partial Derivatives of
    Continuous Archimedean T-norms
    Mirko Navara, Milan Petrik, Peter Sarkoci
  • Learning of the Non-Threshold Functions of Multiple-Valued Logic by a
    Single Multi-Valued Neuron with a Periodic Activation Function
    Igor Aizenberg
  • A Graded Inference Approach based on Infinite-Value Lukasiewicz
    Semantics
    David Picado Muño

LUNCH (Meeting of the TC Executive Committee)

14:45-15:30
Session A: Test and Verification (Chair: D. Michael Miller)
  • MDGs Reduction Technique based on the HOL Theorem Prover
    Sa'ed Abed, Otmane Ait Mohamed
  • Efficient Simulation-Based Debugging of Reversible Logic
    Stefan Frehse, Robert Wille, Rolf Drechsler
Session B: Clones (Chair: Jovanka Pantovic)
  • A Classification of Partial Boolean Clones
    Dietlinde Lau, Karsten Schölzel
  • Endoprimal Monoids and Witness Lemma in Clone Theory
    Hajime Machida, Ivo G. Rosenberg

15:30-16:15
Session A: Circuit/ Device Implementation (Chair: Gerhard Dueck)
  • Quaternary Voltage-Mode Logic Cells and Fixed-Point Multiplication
    Circuits
    Satyendra R.P. Raju Datla, Mitchell A. Thornton
  • Secure Design Flow for Asynchronous Multi-Valued Logic Circuits
    Ashur Rafiev, Julian P. Murphy, Alex Yakovlev
Session B: Spectral Techniques (Chair: Hajime Machida)
  • Heterogeneous Decision Diagrams for Applications in Harmonic Analysis
    on Finite Non-Abelian Groups
    Stanislav Stankovic, Jaakko Astola, D. Michael Miller, Radomir S. Stankovic
  • Remarks on Applicability of Spectral Representations on Finite
    Non-Abelian Groups in the Design for Regularity
    Radomir S. Stankovic, Jaakko Astola, Claudio Moraga

COFFEE BREAK
16:30-18:00
Session A: Mathematical Fuzzy Logic 2 (Chair: Carles Noguera)
• Interpolation Properties for Uninorm Based Logics
  Enrico Marchioni, George Metcalfe
• On a Graded Notion of T-norm and Dominance
  Libor Behounek, Petr Cintula, Ulrich Bodenhofer, Susanne Saminger-Platz, Peter Sarkoci
• The Euler Characteristic of a Formula in Gödel Logic
  Pietro Codara, Ottavio M. D'Antona, Vincenzo Marra
• Completions in Subvarieties of BL-algebras
  Manuela Busaniche, Leonardo Manuel Cabrera

Session B: Logic Design and Switching Theory (Chair: Robert Wille)
• On the Number of Products to Represent Interval Functions by SOPs with Four-Valued Variables
  Tsutomu Sasao
• An Evolutionary Algorithm for Optimization of Pseudo Kronecker Expressions
  Alexander Finder, Rolf Drechsler
• Toffoli Gate Implementation using the Billiard Ball Model
  Hadi Hosseini, Gerhard W. Dueck
• Synthesis of Reversible Circuits with No Ancilla Bits for Large Reversible Functions
  Nouraddin Alhagi, Maher Hawash, Marek Perkowski
Thursday, May 27th

9:00-10:00 Invited Talk (Chair: Joan Gispert)
Conditionals for Continuous Events: Axioms and Models
Daniele Mundici

10:10-11:20
Session A: Mathematical Fuzzy Logic 3 (Chair: Franco Montagna)
• The Automorphism Group of Finite Gödel Algebras
  Stefano Aguzzoli, Brunella Gerla, Vincenzo Marra
• Infinite-Valued Lukasiewicz Logic Based on Principal Lattice Filters
  Félix Bou
• Revisiting Ultraproducts in Fuzzy Predicate Logics
  Pilar Dellunde

Session B: Logic Design and Switching Theory (Chair: Radomir Stankovic)
• Floating-Point Numeric Function Generators Based on Piecewise-Split
  EVMDDs
  Shinobu Nagayama, Tsutomu Sasao, Jon T. Butler
• Synthesis of Small Reversible and Pseudo-Reversible Circuits Using
  Y-Gates and Inverse Y-Gates
  Marek Perkowski, Nouraddin Alhagi, Martin Lukac, Neha Saxena, Scott Blakely
• ESOP-based Toffoli Network Generation with Transformations
  Yasaman Sanaee, Gerhard W. Dueck

COFFEE BREAK

11:40-13:15
Session A: Clones (Chair: Claudio Moraga)
• Finitely Generated Maximal Partial Clones and their Intersections
  Miguel Couceiro, Lucien Haddad
• Galois Connection for Hyper-Clones
  Hajime Machida, Jovanka Pantovic, Ivo G. Rosenberg
• Number of Maximal Partial Clones
  Karsten Schölzel

Session B: VLSI-Architecture (Chair: Tsutomu Sasao)
• Low-Power Mulitple-Valued Reconfigurable VLSI Based on Superposition
  of Bit-Serial Data and Current-Source Control Signals
  Akitaka Ishikawa, Nobuaki Okada, Michitaka Kameyama
• Design of Tamper-Resistant Registers for Multiple-Valued Cryptographic
  Processors
  Yuichi Baba, Naofumi Homma, Atsushi Miyamoto, Takafumi Aoki
• Switching Activity in Stochastic Decoders
  Vincent C. Gaudet, Warren J. Gross
• Reducing Reversible Circuit Cost by Adding Lines
  D. Michael Miller, Robert Wille, Rolf Drechsler
LUNCH (Meeting of the Symposium Committee)

14:30-16:00 Special Session Organized by Mitch Thornton and Takao Waho:
40th Anniversary of ISMVL, with the participation of Claudio Moraga,
Masao Mukaidono and Dan A. Simovici.

COFFEE BREAK

16:15-17:45
Session A: Algebra and Formal Methods (Chair: Enrico Marchioni)
  • The Arity Gap of Polynomial Functions over Bounded Distributive Lattices
    Miguel Couceiro, Erkko Lehtonen
  • Information-Theoretical Mining of Determining Sets for Partially Defined
    Functions
    Dan A. Simovici, Dan Pletea, Rosanne Vetro
  • Classes of Operations Closed under Permutation, Cylindrification and
    Composition
    Miguel Couceiro, Erkko Lehtonen

Session B: Circuits/ Devices and Implementation (Chair: Takahiro Hanyu)
  • Low-Energy Pipelined Multiple-Valued Current-Mode Circuit with 8-Level
    Static Current-Source Control
    Masanori Natsui, Takashi Arimitsu, Takahiro Hanyu
  • A Low-Power Successive Approximation Analog-to-Digital Converter
    Based on 2-Bit/Step Comparison
    Naoki Sugiyama, Hiroshi Noto, Yoshito Nishigami, Ryosuke Oda, Takao
    Waho
  • A Ternary Partial-Response Signaling Scheme for Capacitively Coupled
    Interface
    Yasushi Yuminaka, Kyohei Kawano

18:30 Excursion

21:00 BANQUET
Friday, May 28th

9:00-10:00 Invited Talk (Chair: Felip Manyà)
  Minimal Unsatisfiability: Models & Algorithms
  Joao Marques-Silva

10:10-11:20
Session A: Fuzzy Logic and Soft Computing (Chair: Didier Dubois)
  • Multiple-Valued Logic Interpretations of Analogical, Reverse Analogical, and Paralogical Proportions
    Henri Prade, Gilles Richard
  • Queries with Multivalued Logic-Based Semantics for Imperfect Information Fusion
    Daniel Stamate
  • An Ontology Mediated Multimedia Information Retrieval System
    Umberto Straccia

Session B: Automatic Reasoning and Quantum Computing (Chair: Ines Lynce)
  • Logics of Reasonable Information Sources
    Arnon Avron, Jonathan Ben-Naim, Beata Konikowska
  • Two Many Values: An Algorithmic Outlook on Suszko's Thesis
    Carlos Caldeiro, João Marcos
  • Mapping Binary Functions to a Practical Adiabatic Quantum Computer
    David Rosenbaum, Marek Perkowski

COFFEE BREAK

11:40-13:00 Plenary Session

LUNCH