International Conference on Unconventional Computation 2007

School of Computing, Queen's University

Kingston, Canada

Program

Sunday, August 12, 2007

16:00	Arrival and registration
Evening	Welcome reception

Monday, August 13, 2007

8:00	Registration
8:45	Opening
9:00	Keynote lecture: How Neural Computing Can Still be Unconventional After All These Years *Professor Michael Arbib, University of Southern California*
10:00	Break

UC'07 Session 1 Chair: TBA

10:30	*Agudelo, J.C. and Carnielli, W.* Unconventional Models of Computation Through Non-Standard Logic Circuits
11:00	*Aono, M. and Hara, M.* Living Amoeba-Based Neurocomputer Can Break Through Deadlock
11:30	*Arulanandham, J.J.* Unconventional Stateless Turing-like Machines
12:00	Lunch

Workshop on Unconventional Computational Problems

Organizers: Marius Nagy and Naya Nagy (Queen's University)

13:30	*Nagy, M. and Akl, S.G.* Parallelism in Quantum Information Processing Defeats the Universal Computer
14:00	*Drzadzewski, G. and Wineberg, M.* Comparing Minimum Neighbourhood Evaluation Schemes for Finding Spatially Robust Solutions
14:30	*Drzadzewski, G. and Wineberg, M.* How Solution Density Affects the Finding of Spatially Robust Solutions
15:00	Break
15:30	*Hamann, H. and Worn, H.* Embodied Computation
16:00	*Jafer, S. and Wainer, G.A.* An Environment for Advanced Parallel Simulation of Cellular Models
16:30	*Nagy, N. and Akl, S.G.* Authenticated Quantum Key Distribution without Classical Communication
17:00	*Juan Frausto-Solis and Ernesto Liñán-García* MultiQuenching-Simulated Annealing Algorithm applied to the Protein Folding Problem
Evening	Free (Suggestion: Haunted Walk)

Tuesday, August 14, 2007

UC'07 Session 2 Chair: TBA

9:00	*Freund, R., Paun, G., and Perez-Jimenez, M.J.* Polarizationless P Systems with Active Membranes Working in the Minimally Parallel Mode
9:30	*Goldfarb, L.*

	On One Unconventional Framework for Computation
10:00	*Ishdorj, T.-O. and Petre, I.*
	Computing Through Gene Assembly
10:30	Break
11:00	*Khalid, S., Shah, S.I., and Ahmad , J.*
	Learning Vector Quantization Network for PAPR Reduction in Orthogonal Frequency Division Multiplexing Systems
11:30	*Khan, A., Bashir, S., Naeem, M., Shah, S.I., and Sheikh, A.*
	Binary Ant Colony Algorithm for Symbol Detection in a Spatial Multiplexing System
12:00	Lunch
14:00	Tutorial : Quantum Infomation Processing
	Professor Gilles Brassard, Université de Montréal
Evening	Free (Suggestion: 1000 Island Cruise)

Wednesday, August 15, 2007

9:00	Keynote lecture: Organic User Interfaces (Oui!): Designing Computers in Any Way Shape or Form
	Professor Roel Vertegaal, Queen's University
10:00	Break

UC'07 Session 3 Chair: TBA

10:30	*Nagy, N. and Akl, S.G.*
	Quantum Authenticated Key Distribution
11:00	*Pacheco, J. and Costa, J.F.*
	The Abstract Immune System Algorithm
11:30	*Prost, F.*
	Taming Non-Compositionality Using New Binders
12:00	Lunch
13:30	Presentation on UC '08 by Professor Rudolf Freund, Vienna University of Technology

Workshop on Language Theory in Biocomputing
Organizers: Michael Domaratzki (University of Manitoba) and Kai Salomaa (Queen's University)

14:00	*Ishdorj, T.-O., Loos, R., and Petre, I.*
	Computational Efficiency of Intermolecular Gene Assembly
14:30	*Kari, L. and Mahalingam, K.*
	Watson-Crick Bordered Words and Their Syntactic Monoid
15:00	*Balan, M.S.*
	Automaton Models Inspired by Peptide Computing
15:30	Break
16:00	*Daley, M., McQuillan, I., and McQuillan, J.M.*
	Theoretical and Computational Properties of Transpositions
16:30	*Biegler, F., Daley, M., and Locke, M.E.O.*
	Computation by Annotation: Modelling Epigenetic Regulation
17:00	*Jack, J., Romero-Campero, F., Perez-Jimenez, M., Ibarra, O.H., and Paun, A.*
	Simulating Apoptosis Using Discrete Methods: A Membrane System and a Stochastic Approach
Evening	Sunset Ceremony at Fort Henry

Thursday, August 16, 2007

9:00	Keynote lecture: Nanocomputing by Self-Assembly
	Professor Lila Kari, University of Western Ontario
10:00	Break

UC'07 Session 4 Chair: TBA

10:30	*Rabenal, P., Rodriguez, I. and Rubio, F.* Using River Formation Dynamics to Design Heuristic Algorithms
11:00	*Schoening, U.* Principles of Stochastic Local Search
11:30	*Szeto, K.Y.* Spatial and Temporal Resource Allocation for Adaptive Parallel Genetic Algorithm
12:00	Lunch
14:00	Tutorial: Wireless Ad hoc and Sensor Networks—Challenges and Opportunities *Professor Hossam Hassanein, Queen's University*
Evening	Conference Banquet

Friday, August 17, 2007

9:00	Keynote lecture: Algorithmic Cooling: Putting a New Spin on the Identification of Molecules *Professor Tal Mor, Technion—Israel Institute of Technology*
10:00	Break

UC'07 Session 5 Chair: TBA

10:30	*Velez, M. and Ospina, J.* Gravitational Topological Quantum Computation
11:00	*Wiesner, K. and Crutchfield, J.P.* Computation in quantum dynamical systems
11:30	*Yang, L., Dang, Z., and Ibarra, O.H.* Bond Computing Systems: a Biologically Inspired and High-level Dynamics Model for Pervasive Computing
12:00	Closing and Lunch