UC 2008

7th International Conference on Unconventional Computation

Monday, August 25th

8.00 – 9.15	*Registration*
9.15 – 9.30	*Opening*
9.30 – 10.30	**Invited talk:** *David CORNE:* Predictions for the Future of Optimisation Research
10.30 – 11.00	*Coffee Break*
11.00 – 12.00	**Invited talk (PC):** *Kumaraswamy VELUPILLAI*: Uncomputability and Undecidability in Economic Theory
12.00 – 14.00	*Lunch*
14.00 – 14.30	*Emmanuel HAINRY*: Computing Omega-Limit Sets in Linear Dynamical Systems [UC 83]
14.30 – 15.00	*Manuel MARQUES-PITA, Melanie MITCHELL, Luis M. ROCHA:* The Role of Conceptual Structure in Designing Cellular Automata to Perform Collective Computation [UC 146]
15.00 – 15.30	*Katharina LÜRWER-BRÜGGEMEIER, Martin ZIEGLER:* On Faster Integer Calculations Using Non-arithmetic Primitives [UC 111]
15.30 – 16.00	*Coffee Break*
16.00 – 16.30	*Matthew J. PATITZ, Scott M. Summers:* Self-assembly of Decidable Sets [UC206]
16.30 – 17.00	**Invited talk (CBM):** *James HICKMAN:* How Biological Information Processing May Have Correlates with Quantum Information Processing [CBM I0]

Tuesday, August 26th

8.00 – 9.00	*Registration*
9:00 – 10.00	**Invited talk:** *Jon TIMMIS, Paul ANDREWS, Nick OWENS, Ed CLARK:* Immune Systems and Computation: An Interdisciplinary Adventure
10.00 – 10:30	*Coffee Break*
10.30 – 11.00	*Giorgio DELZANNO, Laurent VAN BEGIN:* A Biologically Inspired Model with Fusion and Clonation of Membranes [UC 64]
11.00 – 11.30	*Niall MURPHY, Damien WOODS:* A Characterisation of **NL** Using Membrane Systems without Charges and Dissolution [UC 164]
11.30 – 12.00	*Shankara Narayanan KRISHNA:* The Expressiveness of Concentration Controlled P Systems [UC 96]
12.00 – 14.00	*Lunch*
20.00 – ??	**Conference Dinner**

Wednesday, August 27th

8.00 – 9.00	*Registration*
9:00 – 10.00	**Invited talk:** *Anne CONDON:* Computational Challenges and Opportunities in the Design of Unconventional Machines from Nucleic Acids
10.00 – 10:30	*Coffee Break*
10.30 – 11.00	*Petrus H. POTGIETER, Elemér E. Rosinger:* Ultrafilter and Non-standard Turing Maschines [UC 220]
11.00 – 11.30	*Edwin BEGGS, José Félix COSTA, Bruno LOFF, John V. TUCKER :* Oracles and Advice as Measurements [UC 33]
11.30 – 12.00	*Urmi MAJUMDER, John H. REIF:* A Framework for Designing Novel Magnetic Tiles Capable of Complex Self-assemblies [UC 129]
12.00 – 14.00	*Lunch*

Thursday, August 28th

9.00 – 10.00	**Invited talk:** *Časlav BRUKNER:* Quantum Experiments Can Test Mathematical Undecidability
10.00 – 10.30	*Coffee Break*
10.30 – 11.00	*Naya NAGY, Marius NAGY, Selim G. AKL:* Quantum Wireless Sensor Networks [UC 177]
11.00 – 11.30	*Michael Kirkedal THOMSEN, Holger Bock AXELSEN:* Parallel Optimization of a Reversible (Quantum) Ripple-Carry Adder [UC 228]
11.30 – 12.00	*Dominique BARTH, Oliver BOURNEZ, Octave BOUSSATON, Johanne COHEN:* Distributed Learning of Wardrop Equilibria [UC 19]
12.00 – 14.00	*Lunch*
14.00 – 14.30	*Turlough NEARY:* On the Computational Complexity of Spiking Neural P Systems [UC 189]
14.30 – 15.00	*Linmin YANG, Yong WANG, Zhe DANG:* Automata on Multisets of Communicating Objects [UC 242]
15.00 – 15.30	*Gabriel Ciobanu:* From Gene Regulation to Stochastic Fusion [UC 51]
15.30	Closing UC 2008
16.00 – 16.30	*Coffee Break*

PC 2008

International Workshop on Physics and Computation

Monday, August 25th

8.00 – 9.15	*Registration*
12.00 – 14.00	*Lunch*
14.00 – 14.10	*José Félix COSTA*: Foreword [PC 0]
14.10 – 14.50	*Andrew ADAMATZKY:* From Reaction-Diffusion to Physarum Computing [PC 1]
14.50 – 15.30	*Jerzy GÓRECKI:* Information Processing with Structured Excitable Medium [PC 2]
15.30 – 16.00	*Coffee Break*
16.00 – 16.40	*John V. TUCKER:* Computations via Newtonian and Relativistics Kinematic Systems [PC 3]
16.40 – 17.20	*Martin ZIEGLER:* Physically-Relativized Church-Turing Hypotheses [PC 4]

Tuesday, August 26th

12.00 – 14.00	*Lunch*
14.00 – 14.40	*Olivier BOURNEZ*: On the Convergence of a Population Protocol when Population Goes to Infinity [PC 5]
14.40 – 15.20	*S. Barry COOPER:* Emergence as a Computability-Theoretic Phenomenon [PC 6]
15.20 – 16.00	*Jean-Charles DELVENNE:* What is a Universal Computing Machine? [PC 7]
16.00 – 16.30	*Coffee Break*
16.30 – 17.10	*Daniel GRAÇA:* Computational Bounds on Polynomial Differential Equations [PC 8]
17.10 – 17.50	*Jeffery ZUCKER:* The Semantics of Classical Physical Networks: A Study of Synchronous Concurrent Algorithms [PC 9]
20.00 – ??	**Conference Dinner**

Wednesday, August 27th

12.00 – 14.00	*Lunch*
14.00 – 14.40	*István NEMETI, Hajnal ANDRÉKA*: General Relativistic Hypercomputing and Foundation of Mathematics [PC 10]
14.40 – 15.20	*Mark HORGARTH:* A New Problem for Rule Following [PC 11]
15.20 – 16.00	*Jérôme DURAND-LOSE:* Black Hole Computation: Imolementation with Signal Machines [PC 12]
16.00 – 16.30	*Coffee Break*
16.30 – 17.10	*Damian WOODS:* Optical Computing [PC 13]

Thursday, August 28th

12.00 – 14.00	*Lunch*
14.00 – 14.40	*Udi BOKER*: The Influence of the Domain Interpretation on Computational Models [PC 14]
14.40 – 15.20	*Francisco António DORIA:* How to Build a Hypercomputer [PC 15]
15.20 – 16.00	*Mike STANNETT:* Computable, Uncomputable, Neither or Both? – A Finitary Computational Formulation of Quantum Theory [PC 16]
16.00 – 16.30	*Coffee Break*
16.30 – 17.10	*Karl SVOZIL:* On the Solution of Trivalent Decision Problems by Quantum State Indentification [PC 17]
17.10 – 17.50	General Discussion & Closing PC

OSC 2008

International Workshop on Optical SuperComputing

Tuesday, August 26th

8.00 – 9.00	*Registration*
10.00 – 10.30	*Coffee Break*
10:30 – 11.15	*Hossin ABDELDAYEM, Donald O. FRAZIER, William K. WITHEROW, Curtis E. BANKS, Benjamin G. PENN, Mark S. PALEY:* Recent Advances in Photonic Devices for Optical Super Computing [OSC I1]
11:15 – 12.00	*H. John CAULFIELD:* Finally, Safe Grounds for Optical Computing [OSC I2]
12.00 – 14.00	*Lunch*
14:00 – 14.25	*Yassef EHRLICHMAN, Ofer AMRANI, Shloma RUSHIN:* Multi-Electrode Approach for Interfacing Optical Computing Devices [OSC 1]
14:25 – 14.50	*Tobias HAIST, Wolfgang OSTEN:* Ultrafast Digital-Optical Arithmetic-Using Wave-Optical Computing [OSC 2]
14:50 – 15.15	*Kristof VANDOORNE, Wouter DIERCKX, Benjamin SCHRAUWEN, David VERSTRAETEN, Peter BIENSTMAN, Roel BAETS, Jan Van CAMPENHOUT:* Photonic Reservoir Computing with Coupled Semiconductor Optical Amplifiers [OSC 3]
15:15 – 15.40	*Dan E. TAMIR, Natan T. SHAKED, Peter J. WILSON, Shlomi DOLEV:* Electro-Optical DSP of Tera Operations per Second and Beyond [OSC 4]
15:40 – 16.00	*Kouichi NITTA, Nobuto KATSUTA, Osamu MATOBA*: A Method for Modulo Operation by Use of Spatial Parallelism [OSC 5]
16.00 – 16.30	*Coffee Break*
16.30 – 16.55	*Damien WOODS , Thomas J. NAUGHTON*: Parallel and Sequential Optical Computing [OSC 6]
16.55 – 17.20	*Y. BEN-ARYEH*: The Use of Hilbert-Schmidt Decomposition for Implementing Quantum Gates [OSC 7]
17.20 – 17.45	*A. Steven YOUNGER, Emmett REDD*: Learning at the Speed of Light: A New Type of Optical Neural Network [OSC 8]
17.45 – 18.10	*Mihai OLTEAN,Oana MUNTEAN*: Solving NP-Complete Problems with Delayed Signals: An Overview of Current Research Directions [OSC 9]
18.10	Closing OSC
20.00 – ??	**Conference Dinner**

CBM 2008

Computing with Biomolecules

Wednesday, August 27th

8.00 – 9.00	*Registration*
10.00 – 10.30	*Coffee Break*
10:30 – 11.15	*Giuditta FRANCO :* DNA Computation: Results, Trends and Perspectives [CBM I1]
11:15 – 12.00	*Anirban BANDYOPADHYAY:* Massive Parallel Processing of Patterns on an Organic Monolayer: Technical Challenges in Realising an Artificial Bio-Processor [CBM I2]
12.00 – 14.00	*Lunch*
14:00 – 14.45	*Shankara Narayanan KRISHNA :* On the Computational Power of P Systems with Worm Objects [CBM I3]
14:45 – 15.10	*Bogdan AMAN, Gabriel CIOBANU:* Membrane Systems with Surface Objects [CBM 1]
15:10 – 15.35	*Rodica CETERCHI, Mario J. PÉREZ JIMÉNEZ, Alexandru Ioan TOMESCU:* Sorting Omega Networks Simulated with P Systems: Optimal Data Layouts [CBM 2]
15:35 – 16.00	*Elena RIVERO-GIL, Miguel. A. GUTIÉRREZ-NARANJO, Álvaro ROMERO-JIMÉNEZ, Agustín RISCOS-NÚÑEZ:* A Software Tool for Generating Graphics by Means of P Systems [CBM 3]
16.00 – 16.30	*Coffee Break*
16.30 – 16.55	*Effirul I.RAMLAN, Klaus-Peter ZAUNER*: An Extended Dot-Bracket-Notation for Functional Nucleic Acids [CBM 4]
16.55 – 17.20	*Turlough NEARY*: A Small Universal Spiking Neural P System [CBM 5]
17.20 – 17.45	*Alexander KRASSOVITSKIY, Yurii ROGOZHIN, Sergey VERLAN*: One-Sided Insertion and Deletion: Traditional and P Systems Case [CBM 6]
17.45 – 18.10	*Rudolf FREUND, Sergey VERLAN*: (Tissue) P Systems Working in the k-Restricted Minimally Parallel Derivation Mode [CBM 7]
18.10	Closing CBM