



CPAIOR-2013 Program

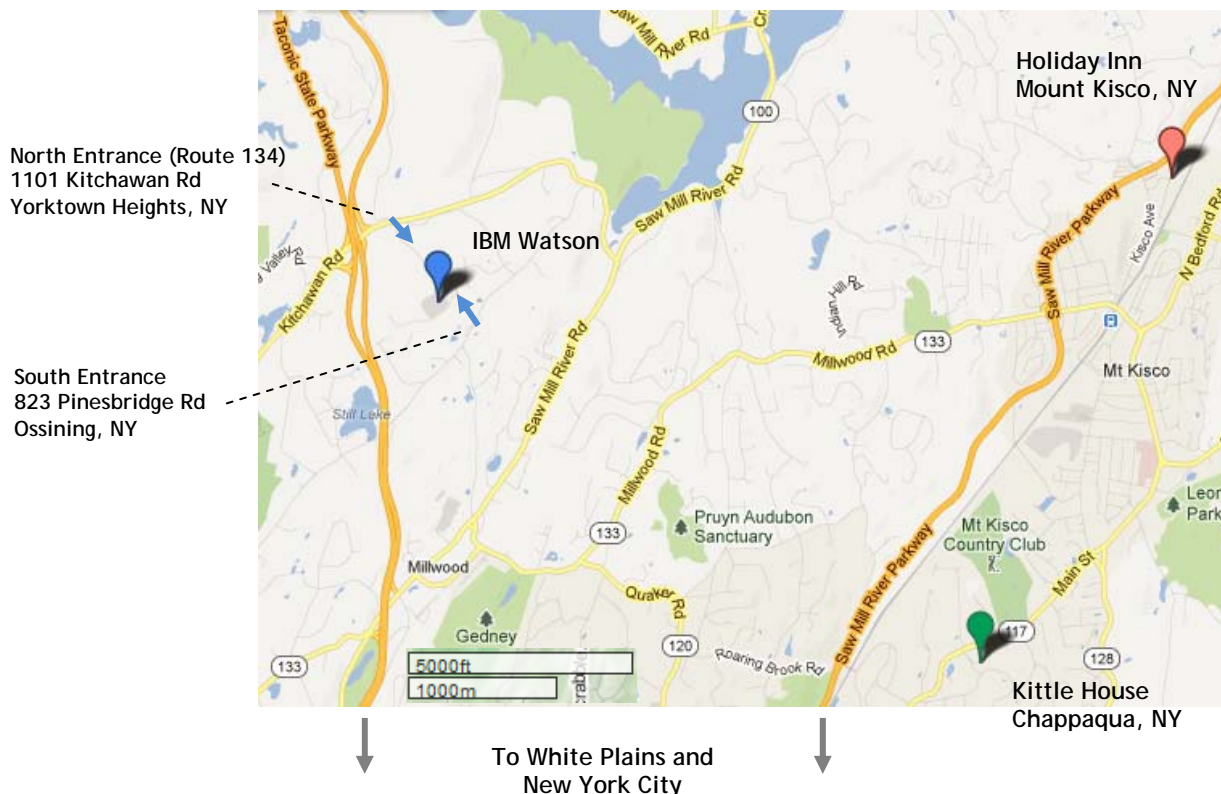
Location: IBM Watson Research Center. Guest parking is available in front of the building.

Registration Desk will be located in the Lobby of IBM Watson. Please register when you first arrive and have your CPAIOR badge be clearly visible while on IBM premises.

Rooms: The Master Class and all main Conference talks will be held in the *IBM Auditorium*, adjacent to the Lobby. All Workshop talks and Late Breaking Abstract presentations will use conference rooms in *aisle 20*.

A **New York City (NYC) Excursion** is scheduled for Monday, May 20, departing from Mount Kisco Train Station at 4 PM. For guests arriving IBM in the arranged bus/shuttle from the Holiday Inn in Mount Kisco, the return bus will depart IBM at 3:15 PM for the Train Station. Those arriving using self-transportation should plan on meeting at the Mount Kisco Train Station (located at 1 Kirby Plaza) at 3:40 PM.

Conference Dinner is scheduled to start at 6 PM on Tuesday, May 21, at Crabtree's Kittle House (www.kittlehouse.com) located at *11 Kittle Rd, Chappaqua, NY 10514*, which is a 15 minute drive south-east of IBM. Bus transportation to Kittle House and then back to the Holiday Inn will be provided only for guests arriving IBM in the arranged bus/shuttle from the Holiday Inn in Mount Kisco.



Saturday, May 18, 2013

7:50 am		Bus Pickup from Holiday Inn, Mount Kisco
8:00 - 8:30 am	Masterclass Computational Sustainability	Registration (IBM Lobby)
8:30 - 9:00 am		Introduction: Optimization and Policy-Making in Computational Sustainability. <i>Barry O'Sullivan, University College Cork</i>
9:00 - 10:30 am		Class 1: Smarter Planet Initiatives. <i>Jayant Kalagnanam, IBM Research</i>
10:30 - 11:00 am		Morning Break (Mezzanine)
11:00 - 12:30 pm		Class 2: Models and Algorithms for Energy Markets with High Penetrations of Renewables. <i>Warren B. Powell, Princeton University</i>
12:30 - 2:00 pm		Lunch (Cafeteria)
2:00 - 3:30 pm		Class 3: Solving Stochastic Optimization Problems with Bounded Risk Through Risk Allocation. <i>Brian Williams, Massachusetts Institute of Technology</i>
3:30 - 4:00 pm		Afternoon Break (Mezzanine)
4:00 - 5:30 pm		Class 4: Zombie Optimization or How I Learned to Love Decomposition. <i>J. Christopher Beck, University of Toronto</i>
5:30 - 6:00 pm		Wrap-up Discussion

Sunday, May 19, 2013

7:50 am	Bus Pickup from Holiday Inn, Mount Kisco		
8:00 - 8:30 am	Registration (IBM Lobby)		
Workshop Topics <i>Location:</i>	General Principles in Seeking Feasible Solutions for Combinatorial Problems <i>20-043 (Teatown Room)</i>	Parallel Methods for Combinatorial Search & Optimization <i>20-001 (Kitchawan Room)</i>	Algorithm Selection and Configuration <i>20-051 (Taconic Room)</i>
8:30 - 10:00 am	<p><u>8:30-8:35</u>: Welcome and Opening Remarks. <i>John Chinneck, Gilles Pesant</i></p> <p><u>8:35-9:15</u>: Branching to Force Constraint Satisfaction in CP. <i>Gilles Pesant</i></p> <p><u>9:15-10:00</u>: Branching to Force Variable Value Propagation in MILP. <i>John Chinneck</i></p>		<p><u>8:30-9:00</u>: Proteus: A Hierarchical Portfolio of Solvers and Transformations. <i>Barry O'Sullivan</i></p> <p><u>9:00-9:30</u>: Algorithm Portfolios Based on Cost-Sensitive Clustering. <i>Meinolf Sellmann</i></p> <p><u>9:30-10:00</u>: Neighborhood-based Algorithm Selection With+Without Training. <i>Ashish Sabharwal</i></p>
10:00am - 10:30am	Morning Break (Cafeteria)		
10:30am - Noon	<p><u>10:30-11:15</u>: Principles of Feasibility Pumping. <i>Domenico Salvagnin</i></p> <p><u>11:15-12:00</u>: Complexity of Search: What we can Learn from Games. <i>Ted Ralphs</i></p>	<p><u>10:30-11:00</u>: Prediction of Parallel Speed-ups for Las Vegas Algorithms. <i>Florian Richoux</i></p> <p><u>11:00am</u>: Sequential and Parallel Restart Policies for Constraint-based Local Search. <i>Yves Caniou</i></p> <p><u>11:30-12:00</u>: Concurrent Local Solvers. <i>Philippe Codognet</i></p>	<p><u>10:30-11:00</u>: Model-Based Algorithm Configuration. <i>Frank Hutter</i></p> <p><u>11:00-11:30</u>: Evolving Instance-Specific Algorithm Configuration. <i>Yuri Malitsky</i></p> <p><u>11:30-12:00</u>: LLAMA-Algorithm Selection Tool. <i>Lars Kotthoff</i></p>
12:00pm- 1:30 pm	Lunch Break (Cafeteria)		
1:30 - 3:00 pm	<p><u>1:30 - 2:15</u>: A Primal/Dual Framework for Combinatorial Problem Solving. <i>John Hooker</i></p> <p><u>2:15 - 3:00</u>: Branching Rules in Three Guises: Information, Actions, and Performance Quality. <i>Rick Wallace</i></p>	<p><u>1:30-2:00</u>: A framework for parallel SAT solving. <i>Horst Samulowitz</i></p> <p><u>2:00-2:30</u>: Parallelising the k-Medoids Clustering Problem Using Space-Partitioning. <i>Luis Quesada</i></p> <p><u>2:30-3:00</u>: Challenges introducing a parallel search engine for CP search at Quintiq. <i>David Rijnsman</i></p>	
3:00 pm - 3:30 pm	Afternoon Break (Cafeteria)		
3:30 - 5:00 pm	<p><u>3:30-4:15</u>: Branching Strategies and Restarts in SAT solvers. <i>Ashish Sabharwal</i></p> <p><u>4:15-5:00</u>: Panel and Open Discussion.</p>	<p><u>3:30-4:00</u>: Parallel Dichotomic Search. <i>Meinolf Sellmann</i></p> <p><u>4:00</u>: Discussion Session.</p>	

Workshops

Monday, May 20, 2013

7:50 am	Main Conference	Bus Pickup from Holiday Inn, Mount Kisco
8:00 - 8:30 am		Registration (IBM Lobby)
8:30 - 8:45 am		Welcome (Auditorium)
8:45 - 9:30 am		<p>Session 1: Non-Linear and Global Optimization</p> <ol style="list-style-type: none"> Learning and Propagating Lagrangian Variable Bounds for Mixed-Integer Nonlinear Programming. <i>Ambros Gleixner and Stefan Weltge</i> Projective and asymptotic constraint propagation and relaxation methods for unbounded mixed-integer CSPs. <i>Hermann Schichl, Arnold Neumaier, Mihaly Csaba Markot and Ferenc Domes</i>
9:30 - 10:00 am		Morning Break (Mezzanine)
10:00 - 11:00 am		Special Guest: Ralph Gomory "From Practice to Theory"
11:00 am - Noon		<p>Session 2: Hybrid Methods</p> <ol style="list-style-type: none"> Solving Wind Farm Layout Optimization with Mixed Integer Programming and Constraint Programming. <i>Peter Y. Zhang, David A. Romero, J. Christopher Beck and Cristina H. Amon</i> An MDD Approach to Multidimensional Bin Packing. <i>Brian Kell and Willem-Jan van Hoeve</i> Orbital Shrinking: a new tool for hybrid MIP/CP methods. <i>Domenico Salvagnin</i>
Noon - 1:00pm		Lunch Break (Cafeteria)
1:00 - 2:00 pm		Invited Talk: Andreas Krause "Sequential Decision Making in Experimental Design and Computational Sustainability via Adaptive Submodularity"
2:00 - 3:00 pm		<p>Session 3: Theory</p> <ol style="list-style-type: none"> Decision diagrams and dynamic programming. <i>John Hooker</i> MiniZinc with Functions. <i>Peter Stuckey and Guido Tack</i> Some New Tractable Classes of CSPs and their Relations with Backtracking Algorithms. <i>Achref El Mouelhi, Philippe Jegou, Cyril Terrioux and Bruno Zanuttini</i>
3:15 pm - Night	Excursion to New York City Meeting Point for Holiday Inn guests: Bus pickup, 3:15 pm @ IBM Meeting Point for self-transportation: 3:40 pm @ Mount Kisco Train Station	

Tuesday, May 21, 2013

7:50 am	Main Conference	Bus Pickup from Holiday Inn, Mount Kisco
8:00 - 8:30 am		Registration (IBM Lobby)
8:30 – 9:30 am		<p>Session 4: SAT and MaxSAT</p> <ol style="list-style-type: none"> 1. Revisiting Hyper Binary Resolution. <i>Marijn Heule, Matti Järvisalo and Armin Biere</i> 2. Enumerating Infeasibility: Finding Multiple MUSes Quickly. <i>Mark Liffiton and Ammar Malik</i> 3. Solving (Weighted) Partial MaxSAT with ILP. <i>Carlos Ansótegui and Joel Gabas</i>
9:30 – 10:00 am		Morning Break (Mezzanine)
10:00 – 11:00 am		<p>Invited Talk: Peter van Beek "Constraint Programming in Compiler Optimization: Lessons Learned"</p>
11:00 am – Noon		<p>Session 5: Search and Inference in MIP</p> <ol style="list-style-type: none"> 1. Stronger Inference Through Implied Literals From Conflicts and Knapsack Covers. <i>Tobias Achterberg, Ashish Sabharwal and Horst Samulowitz</i> 2. Cloud branching. <i>Timo Berthold and Domenico Salvagnin</i> 3. Improving strong branching by propagation. <i>Gerald Gamrath</i>
Noon – 1:30pm		Lunch Break (Cafeteria)
1:30 – 2:30 pm		<p>Invited Tutorial: Carlos Ansotegui-Gil "Recent Advances in Maximum Satisfiability and Extensions"</p>
2:30 – 3:30 pm		<p>Session 6: Cumulative and Cardinality Constraints</p> <ol style="list-style-type: none"> 1. A Synchronized Sweep Algorithm for the k-dimensional cumulative Constraint. <i>Arnaud Letort, Nicolas Beldiceanu and Mats Carlsson</i> 2. Explaining Time-Table-Edge-Finding Propagation for the Cumulative Resource Constraint. <i>Andreas Schutt, Thibaut Feydy and Peter Stuckey</i> 3. Tight LP-relaxations of overlapping global cardinality constraints. <i>Ioannis Mourtos</i>
3:30 – 4:00 pm		Afternoon Break (Mezzanine)
4:00 - 5:00 pm		<p>Session 7: Applications</p> <ol style="list-style-type: none"> 1. Coalition Formation for Servicing Dynamic Motion Tasks. <i>Udara Weerakoon and Vicki Allan</i> 2. A Lagrangian Relaxation Based Forward-backward Improvement Heuristic for Maximizing the Net Present Value of Resource-Constrained Projects. <i>Hanyu Gu, Andreas Schutt and Peter Stuckey</i> 3. Constraint-Based Fitness Function for Search-Based Software Testing. <i>Abdelilah Sakti, Yann-Gaël Guéhéneuc and Gilles Pesant</i>
5:30 pm – Night	<p>Conference Dinner Crabtree's Kittle House (www.kittlehouse.com)</p> <p>Meeting Point for Holiday Inn guests: Bus pickup, 5:30 pm @ IBM Meeting Point for self-transportation: 5:45 pm @ 11 Kittle Road, Chappaqua, NY 10514</p>	

Wednesday, May 22, 2013

7:50 am	Main Conference	Bus Pickup from Holiday Inn, Mount Kisco		
8:00 - 8:30 am		Registration (IBM Lobby)		
8:30 - 9:30 am		<p>Session 8: Decomposition</p> <ol style="list-style-type: none"> Mixed integer programming vs logic-based Benders decomposition for planning and scheduling. <i>Andre Cire, Elvin Coban and John Hooker</i> Recent improvements using constraint integer programming for resource allocation and scheduling problems. <i>Chris Beck, Stefan Heinz and Wen-Yang Ku</i> Computational Experience with Hypergraph-based Methods for Automatic Decomposition in Integer Programming. <i>Jiadong Wang and Ted Ralphs</i> 		
9:30 - 10:00 am		Morning Break (Mezzanine)		
10:00 - 11:00 am		<p>Invited Talk: Vijay Saraswat</p> <p>“Scalable Concurrent Application Frameworks for Constraint Solving”</p>		
11:00 am - Noon		<p>Session 9: Robustness, Symmetry, and Algorithm Portfolios</p> <ol style="list-style-type: none"> Modeling Robustness in CSPs as Weighted CSPs. <i>Laura Climent, Richard J. Wallace, Miguel A. Salido and Federico Barber</i> An Adaptive Model Restarts Heuristic. <i>Nina Narodytska and Toby Walsh</i> An Empirical Evaluation of Portfolios Approaches for solving CSPs. <i>Roberto Amadini, Maurizio Gabbrielli and Jacopo Mauro</i> 		
Noon - 1:30pm		Lunch Break (Cafeteria)		
1:30 - 2:30 pm		<p>Session 10: MIP Applications</p> <ol style="list-style-type: none"> The Rooted Maximum Node-Weight Connected Subgraph Problem. <i>Eduardo Álvarez-Miranda, Ivana Ljubic and Petra Mutzel</i> A Branch-and-Cut Algorithm for Solving the Team Orienteering Problem. <i>Duc-Cuong Dang, Racha El Hajj and Aziz Moukrim</i> Improved Discrete Reformulations for the Quadratic Assignment Problem. <i>Axel Nyberg, Tapio Westerlund and Andreas Lundell</i> 		
2:30 - 3:30 pm		<p>Session 11: CP Applications</p> <ol style="list-style-type: none"> Scheduling and Routing with Time-Dependent Task Costs. <i>Elena Kelareva, Kevin Tierney and Philip Kilby</i> A Lagrangean Relaxation for Golomb Rulers. <i>Marla Slusky and Willem-Jan Van Hoeve</i> Tuning Parameters of Large Neighborhood Search for the Machine Reassignment Problem. <i>Yuri Malitsky, Deepak Mehta, Barry O'Sullivan and Helmut Simonis</i> 		
3:30 - 4:00 pm		Afternoon Break (Cafeteria)		
4:00 - 5:00 pm	Late Breaking Abstracts (Rooms in Aisle 20)			
	<p>20-043 (Teatown Room)</p> <ol style="list-style-type: none"> Constraint-based Clustering. <i>Lars Kotthoff, Barry O'Sullivan</i> Domain reduction of input variables using a new consistency algorithm. <i>Jomu GM Paret, Otmane Ait Mohamed</i> 	<p>20-001 (Kitchawan Room)</p> <ol style="list-style-type: none"> Towards a Fast Heuristic for Global Optimization and MINLP. <i>John Chinneck and Mubashsharul Shafique</i> Parallel Local Search for SAT. <i>Alejandro Arbelaez and Philippe Codognet</i> Measuring the impact of primal heuristics. <i>Timo Berthold</i> 	<p>20-051 (Taconic Room)</p> <ol style="list-style-type: none"> Connecting Constraint Solvers to AMPL. <i>Victor Zverovich and Robert Fourer</i> Symmetry Breaking in Scenario Generation. <i>Steve Prestwich, Marco Laumanns and Ban Kawas</i> Simulation-Based Fitness Evaluation in Genetic Algorithm. <i>Tauhid Ahmed</i> 	