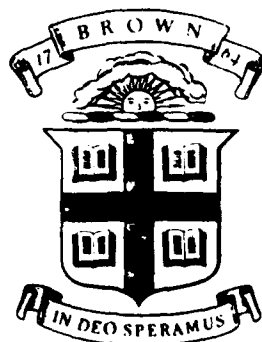
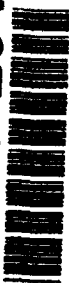


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BROWN UNIVERSITY

Program

First Workshop on
Principles and Practice of
Constraint Programming

April 28-30, 1993
Newport, Rhode Island

Sponsored by ONR

NA00014-G2-1-0206



Department

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First Workshop on Principles and Practice of Constraint Programming

April 28-30, 1993

Newport, Rhode Island

Sponsored by ONR

Technical Program

The First Workshop on the Principles and Practice of Constraint Programming (April 28-30, 1993 in Newport, RI) is an inter-disciplinary meeting focusing on constraint programming as a general paradigm for computation. The workshop is sponsored by the Office of Naval Research (ONR). It is organized by Paris Kanellakis (Brown University), Jean-Louis Lassez (IBM Watson), Clifford Lau (ONR), Vijay Saraswat (Xerox PARC), Ralph Wachter (ONR), and Donald Wagner (ONR). Local arrangements were made by Pascal van Hentenryck (Brown University). The program committee is:

Alan Borning (Univ. of Washington, Seattle)	Jacques Cohen (Brandeis Univ.)
Johan de Kleer (Xerox PARC)	David Dill (Stanford Univ.)
Eugene Freuder (Univ. of New Hampshire)	John Hooker (CMU)
Joxan Jaffar (IBM Watson)	Paris Kanellakis (Brown Univ.)
Deepak Kapur (SUNY Albany)	Dexter Kozen (Cornell Univ.)
Jean-Louis Lassez (IBM Watson)	Jean-Claude Latombe (Stanford Univ.)
Nancy Lynch (MIT)	David McAllester (MIT)
Albert Meyer (MIT)	Anil Nerode (Cornell Univ.)
Fernando Pereira (AT&T Bell Labs)	Raghu Ramakrishnan (Univ. of Wisconsin)
Vijay Saraswat (Xerox PARC)	Pascal Van Hentenryck (Brown Univ.)

The meeting will be small and informal, providing forums for prepared presentations, panels and discussions. Participation is by invitation of the program committee and is restricted primarily to authors of contributed papers. Proceedings will be available at the workshop in technical report form.

Workshop Organization: The workshop includes invited talks (half an hour followed by equal question and discussion time) and sessions. Each session is organized around a theme. It has a list of panelists selected from the workshop attendees, a list of papers selected for short presentations in that session, and it is to be moderated by members of the program committee and workshop organizers. Each session also has time for open discussion by the moderators, panelists, and the audience.

The proceedings will contain copies of 37 position papers, which were selected from 94 submissions to the workshop. The selected position papers formed the basis for composing the list of invitees. A subset of these papers was selected for short (15 minute) presentations, whose purpose is to set the stage for the half-hour panel discussions in each session.

The design of each session is in the hands of its moderators, subject to the condition that each planned presentation is allotted 15 minutes. Each session should have at least half an hour free for

open discussion—moderators may want to ensure that at least all panelists for the session have an opportunity to speak for some time. To make each session successful, we ask that the moderators correspond with each other, and identify basic issues which can serve as the backbone for open-ended discussion. Moderators are ultimately responsible for the allocation of remaining time and for additional speakers in this time.

In the overall organization an attempt was made to devote most time to open but structured discussion. An attempt was also made to include as many researchers with an active interest in constraint programming as possible, while keeping the size and atmosphere of a workshop.

Tuesday April 27th

8:00pm-10:00pm Welcoming Reception at Hotel

Wednesday April 28th

8:30am-9:00am Breakfast

9:00am-10:00am Invited Talk by A. Colmerauer (30 min.)

Moderator: J.-L. Lassez

Open Discussion (30 min.)

10:00am-10:30am Coffee Break

10:30am-12:00pm Session on Constraints in Logic Programming

Moderators: Jaffar, Van Hentenryck, Pereira

Panelists: Benhamou, Johnson, Maher, McAloon, Michaylov, Older, Tretkoff, Warren

Initial Presentations (15 min. each):

Higher-Order Logic Programming as Constraint Logic Programming
Spiro Michaylov, Frank Pfenning

Programming in CLP(BNR)
William Older, Frédéric Benhamou

Memoization in Constraint Logic Programming
Mark Johnson

2lp: Linear Programming and Logic Programming
Ken McAloon, Carol Tretkoff

Open Discussion (30 min.)

12:00pm-1:30pm Lunch at hotel.

- 1:30pm-3:00pm Session on Constraints and Concurrency
- Moderators:** Dill, Lynch, Saraswat
- Panelists:** Aït-Kaci, Haridi, Mackworth, Montanari, Rossi, Savor, Zhang
- Initial Presentations (15 min. each):**
- Constraint Satisfaction, Constraint Programming and Concurrency*
Ugo Montanari, Francesca Rossi
- Constraint Programming in Constraint Nets*
Ying Zhang, Alan Mackworth
- A Real Time Extension to Logic Programming Based on the Concurrent Constraint Logic Programming Paradigm*
Tony Savor, Paul Dasiewicz
- The Andorra Kernel Language (AKL): A General Purpose Concurrent Constraint Language*
Sverker Janson, Seif Haridi, Johan Montelius, Torkel Franzén, Per Brand, Kent Boortz, Björn Danielsson
- Open Discussion (30 min.)**
- 3:00pm-3:30pm Coffee Break
- 3:30pm-5:00pm Session on Programming with Constraints
- Moderators:** Borning, Cohen, J.-L. Lassez
- Panelists:** Bobrow, Keirouz, Kramer, Meyers, Reiss, Sannella, D. Smith, Zippel
- Initial Presentations (15 min. each):**
- Exploiting Dependency Information for Debugging and Explanation*
Walid Keirouz, Glenn Kramer, Jahir Pabon
- Constraining the Structure and Style of Object-Oriented Programs*
Scott Meyers, Carolyn Duby, Steven Reiss
- Synthesis of Constraint Algorithms*
Douglas Smith
- A Constraint Based Scientific Programming Language*
Richard Zippel
- Open Discussion (30 min.)**
- 5:00pm Dinner (on your own)

Thursday April 29th

- 8:30am-9:00am Breakfast

- 9:00am-10:00am Invited Talk by H. Gallaire (30 min.)
 Moderator: Saraswat
 Open Discussion (30 min.)
- 10:00am-10:30am Coffee Break
- 10:30am-11:45am Session on Constraint Databases
 Moderators: Kanellakis, Ramakrishnan
 Panelists: Brodsky, Cruz, Kuper, C. Lassez, Naqvi, T. Smith
 Initial Presentations (15 min. each):
 Separability of Polyhedra and a New Approach to Spatial Storage
 Alexander Brodsky, Catherine Lassez
 Aggregation in Constraint Databases
 Gabriel Kuper
 Using a Visual Constraint Language for Data Display Specification
 Isabel Cruz
 Open Discussion (30 min.)
- 11:45am-1:00pm Lunch at hotel
- 1:00pm-2:15pm Session on Constraint Solving I
 Moderators: Kapur, Kozen, Meyer
 Panelists: Dubé, Fages, Imbert, H. Kirchner, Mantha, Yap
 Initial Presentations (15 min. each):
 The Geometry in Constraint Logic Programs
 Thomas Dubé, Chee-Keng Yap
 Fourier's Elimination: Which to Choose?
 Jean-Louis Imbert
 Implementing Computational Logics with Constraints
 Claude Kirchner, Hélène Kirchner, Marian Vittek
 Open Discussion (30 min.)
- 2:15pm-2:30pm Coffee Break

- 2:30pm-4:00pm Session on Constraint Solving II
Moderators: de Kleer, Freuder, McAllester
Panelists: Frühwirth, Hubbe, Jégou, Kasif, Menezes, Rounds
Initial Presentations (15 min. each):
Domains Decomposition in Finite Constraint-Satisfaction Problems
Philippe Jégou
A Disjunctive Decomposition Schema for Constraint Satisfaction
Eugene Freuder, Paul Hubbe
Terminological Reasoning with Constraint Handling Rules
Thom Frühwirth, Philipp Hanschke
Local Consistency in Parallel Constraint-Satisfaction Networks
Simon Kasif, Arthur Delcher
Open Discussion (30 min.)
- 4:00pm-6:00pm Visit to "The Breakers" mansion and Newport tour
- 6:00pm-9:00pm Banquet at the Eisenhower House

Friday April 30th

- 8:00am-8:30am Breakfast
- 8:30am-9:30am Invited Talk by A. Nerode (30 min.)
Moderator: Kanellakis
Open Discussion (30 min.)
- 9:30am-9:45am Coffee Break
- 9:45am-11:15am Session on Applications
Moderators: Hooker, Latombe, Nerode
Panelists: Donikian, Fernando, Gleicher, Major, Pai, Ward
Initial Presentations (15 min. each):
Robot Programming and Constraints
Dinesh Pai
Constraint Satisfaction in Functional Programming
François Major, Marcel Turcotte, Guy Lapalme
Constraint Management in a Declarative Design Method for 3D Scene Sketch Modeling
Stéphane Donikian, Gérard Hégron
Practical Issues in Programming Constraints
Michael Gleicher
Open Discussion (30 min.)

11:15am-11:30am Coffee Break

11:30am-12:00pm ONR Panel

Moderators: Lau, Wachter, Wagner

12:00pm END OF WORKSHOP.

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