PROGRAM OF WORKSHOPS

December 15, Thursday *Morning*

Parallel Logic Programming	Automated Theorem Proving	Heterogeneous Cooperative Knowledge-Bases
W1	**W2**	**W3**
Room Shinano (1F)	Room Yodo (1F)	Room Kiso (1F)

9:20 - 10:30	*8:55 - 10:40*	*9:30 - 10:40*
Opening	Opening **Ryuzo Hasegawa** (ICOT, Japan)	Opening **Kazumasa Yokota** (ICOT, Japan)
<Session 1> Invited Talk (1) **CCP as a basis for multiparadigm programming** **Seif Haridi** (SICS, Sweden)	Invited Talk (1) **When does a First-order Proof Procedure define a good Logic Programming Procedure?** **Donald W. Loveland** (Duke Univ., U.S.A.)	Invited Talk (1) **Global Information Management via Local Autonomous Agents** **Michael N. Huhns, Munindar P. Singh, Tomasz Ksiezyk** (MCC, U.S.A.)

10:50 - 12:50		*11:00 - 11:50*
<Session 2: Language> **Embedding of Moded Flat GHC into Polyadic π-Calculus** **Keiji Hirata** (NTT, Japan) **An Efficient Implementation of Reflection in KL1** **Toshiyuki Takahashi, Masayuki Takeda** (Science Univ. of Tokyo, Japan) **Moded Flat GHC for Data-Parallel Programming** **Kazunori Ueda** (Waseda Univ., Japan)	**MGTP Application Study to Inductive Logic Programming** **Naoki Yagi, Keiko Shimazu, Koichi Furukawa, Akihiro Kimura** (Keio Univ., Japan) **A Relevant Logic Approach to Automated Theorem Finding** **Jingde Cheng** (Kyushu Univ., Japan)	< Applications (1) > **Nonlinear Systems, Automata, and Agents: Managing their Symbolic Data Using Light Weight Persistent Object Managers** **Robert L. Grossman, W. Kohn, A. Nerode** (Univ. of Illinois at Chicago, U.S.A.) **Towards a Formal Representation of the Knowledge Encompassed in Aerial Images** **Edwige Pissaloux, Brigitte Hoeltzener** (Univ. Paris XI, France)

	11:00 - 12:10	
	Invited Talk (2) **First Results of Studying Quasigroup Identities by Rewriting Techniques** **Mark E. Stickel** (SRI, U.S.A.) **Hantao Zhang** (Univ. of Iowa, U.S.A.) **Lemmas with Matching over PTTP: Efficiency and Limitation** **Koji Iwanuma, Y. Chino, H. Ashizawa** (Yamanashi Univ., Japan)	

December 15, Thursday *Morning*

Fusion of Molecular Biology and Knowledge Information Processing	Application of Logic Programming to Legal Reasoning	Parallel and Distributed LSI-CAD
W4	**W5**	**W6**
Room Tateyama (3F)	Room Rokko (3F)	Room Hodaka (3F)

W4 — Room Tateyama (3F)

9:30 - 10:40

Opening
Kiyoshi Asai
(ETL, Japan)

Invited Talk (1)
Using Stochastic Context-Free Grammers to Fold, Align and Model Homologous RNA Sequences
Yasubumi Sakakibara
(Fujitsu Lab., Japan)
Michael Brown, Richard Hughey,
I. Saira Mian, Kimmer Sjolander,
Rebecca C. Underwood,
David Haussler
(UCSC, U.S.A.)

10:50 - 12:10

On Sequence-Structure Alignment using Stochastic Grammars
Yasubumi Sakakibara
(Fujitsu Lab., Japan)

Extraction of Signal Patterns in DNA Sequences
- Topology Optimization of Hidden Markov Model using Genetic Algorithm -
Tetsushi Yada
(MRI, Japan)
Masato Ishikawa, Hidetoshi Tanaka
(ICOT, Japan)
Kiyoshi Asai
(ETL, Japan)

W5 — Room Rokko (3F)

9:30 - 11:50

The Vienna Sales Convention in a DOOD Language
Chie Takahashi
(JIPDEC, Japan)
Kazumasa Yokota
(ICOT, Japan)

Defeasible Reasoning in Japanese Criminal Jurisprudence
Masato Shibasaki, Katsumi Nitta
(ICOT, Japan)

A Controlled Linguistic Mode and A Representative Framework for Legal Phrase Analysis
Hirosato Nomura
(Kyushu Institute of Technology, Japan)

Invited Talk (1)
Cases and Rules: A Natural Synergy
Edwina L. Rissland
(Masachusetts Univ., U.S.A.)

W6 — Room Hodaka (3F)

9:00 - 10:30

< Project Activities >

Parallel LSI-CAD Research in the Fifth Generation Computer Systems Project
Kazuo Taki
(Kobe Univ., Japan)

CAD Application on Parallel Machine Cenju
Tsukasa Yamauchi
(NEC, Japan)

11:00 - 12:30

< Special Hardware/BDD Computation >

Thread Processor TP5000 for CAD Acceleration
Shintaro Shimogori, Koichiro Takayama,
Hidetoshi Matsuoka, Kioto Hirahara,
Fumiyasu Hirose
(Fujitsu Lab., Japan)

Reconfigurable Machines based on SRAM-type FPGA's and their Applications
Masahiro Numa, Shin-ichi Inoue,
Fuminori Sumikawa, Kotaro Hirano
(Kobe Univ., Japan)

Parallel Inverse Image Computation for BDD-based Formal Verification of Sequential Circuits
Kouichi Nagami, Shinji Kimura,
Katsumasa Watanabe
(NAIST, Japan)

PROGRAM OF WORKSHOPS

December 15, Thursday *Afternoon*

Parallel Logic Programming	Automated Theorem Proving	Heterogeneous Cooperative Knowledge Base
W1	**W2**	**W3**
Room Shinano (1F)	Room Yodo (1F)	Room Kiso (1F)

W1 — Room Shinano (1F)

14:00 - 15:00

<Session 3>

Invited Talk (2)
Some Shared Problems in Compiling Functional and Logic Languages
Arvind
(MIT, U.S.A.)

15:20 - 18:00

<Session 4: Systems>
Super Monaco Brothers: The Sequel
James S. Larson, Bart C. Massey, Evan Tick
(Univ. of Oregon, U.S.A.)

Design of A Distributed Scheduler for A Parallel CLP System
Liang-Liang Li
(ECRC, Germany)

System Integration of the Parallel Inference Engine PIE64
Takuya Araki, Yasuo Hidaka, Hidemoto Nakada, Hanpei Koike, Hidehiko Tanaka
(Univ. of Tokyo, Japan)

Load Distribution System of PIE64
Satoshi Murakami, Hidemoto Nakada, Yasuo Hidaka, Hanpei Koike, Hidehiko Tanaka
(Univ. of Tokyo, Japan)

W2 — Room Yodo (1F)

14:00 - 15:40

Invited Talk (3)
High Performance Reasoning Systems: Some Opportunities
John Slaney
(ANU, Australia)

More on quasigroup problems
Masayuki Fujita
(MRI, Japan)

Two Approaches for Finite-Domain Constraint Satisfaction Problems
Yasuyuki Shirai, Ryuzo Hasegawa
(ICOT, Japan)

16:00 - 17:40

Invited Talk (4)
Implementing Bottom-up Procedures with Code Trees
Andrei Voronkov
(Uppsala Univ., Sweden)

Modal Clause Transformation: A Bottom-Up Approach to Modal Theorem Proving
Junichi Akahani
(NTT, Japan)
Katsumi Inoue
(Toyohashi Univ. of Technology, Japan)
Ryuzo Hasegawa
(ICOT, Japan)

Refutationally Complete Inference Rules for Inductive Theorem Proving based on Term Rewriting Techniques
Akihiko Ohsuga
(Toshiba, Japan)
Kô Sakai
(Univ. of Tsukuba, Japan)
Shin-ichi Hon-iden
(Toshiba, Japan)

W3 — Room Kiso (1F)

13:20 - 15:40

Invited Talk (2)
Using Reflection as a Means of Achieving Cooperation
David Edmond, Mike Papazoglou, Zahir Tari
(Queensland Univ. of Technology, Australia)

< Cooperation Framework >

Heterogeneous Distributed Cooperative Problem Solving System Helios and Its Cooperation Mechanisms
Akira Aiba, Kazumasa Yokota, Hiroshi Tsuda
(ICOT, Japan)

Distributed Object Oriented Logic Programming
Keith L. Clark, Tzone I. Wang
(Imperial College, U.K.)

A Flexible Facilitator-Based Cooperation Framework
Paul-Andre Tourtier
(INRIA, France)

16:00 - 17:20

< Knowledge Sharing and Databases >

Agent Communication with Multiple Ontologies
Hideaki Takeda, Kenji Iino, Toyoaki Nishida
(NAIST, Japan)

A Distributed and Anonymous Knowledge Sharing Approach to Software Interoperation
Michael R. Genesereth, Narinder P. Singh, Mustafa A. Syed
(Stanford Univ., U.S.A.)

A Flexible Paradigm for Semantic Integration in Cooperative Heterogeneous Databases
C.H.C. Leung, S. Kaspi
(Victoria Univ. of Technology, Australia)

PROGRAM OF WORKSHOPS

December 15, Thursday *Afternoon*

Fusion of Molecular Biology and Knowledge Information Processing	Application of Logic Programming to Legal Reasoning	Parallel and Distributed LSI-CAD
W4	**W5**	**W6**
Room Tateyama (3F)	Room Rokko (3F)	Room Hodaka (3F)

W4 — Room Tateyama (3F)

14:00 - 15:00

Invited Talk (2)
Modeling Protein Families and Human Genes: Hidden Markov Models and a Little Beyond
Pierre Baldi
(CalTech, U.S.A.)
Yves Chauvin
(Net-ID, U.S.A.)

15:10 - 17:10

Representation of a 3D Protein Structure Using a Sequence of Line Segments
Tatsuya Akutsu, Hiroshi Tashimo
(Gunma Univ., Japan)

Inverse Protein Folding using Multi-Scale Structure Description
Kentaro Onizuka
(Matsushita Research Inst., Japan)
Kiyoshi Asai
(ETL, Japan)

Modeling of Protein Structure by Hidden Markov Models
Kiyoshi Asai
(ETL, Japan)
Kentaro Onizuka
(Matsushita Research Inst., Japan)
Masayuki Akahoshi, Hidetoshi Tanaka
(ICOT, Japan)
Katsunobu Itou
(ETL, Japan)

W5 — Room Rokko (3F)

13:00 - 14:50

Similarity of Cases: From Temporal Relations of Affairs
Satoshi Tojo
(MRI, Japan)
Katsumi Nitta
(ICOT, Japan)

A Sorted Generalization for Legal Reasoning
Makoto Haraguchi, Tokuyasu Kakuta
(Tokyo Institute of Technology, Japan)

Invited Talk (2)
Argument and Reconciliation
Robert A. Kowalski, Francesca Toni
(Imperial College, U.K.)

15:10 - 17:00

Constructing a Legal Ontology from a General Ontology
Masaki Kurematsu, Masayoshi Tada, Takahira Yamaguchi
(Shizuoka Univ., Japan)

The Knowledge Structure of Legal Meta-inference and Systematization
Hajime Yoshino
(Meijigakuin Univ., Japan)

Invited Talk (3)
Perspectives on Artificial Intelligence and Legal Reasoning
L. Thorne McCarty
(Rutgers Univ., U.S.A.)

17:20 - 18:20

General Discussion

W6 — Room Hodaka (3F)

13:30 - 14:30

< Layout >

Development and Evaluation for Area Dividing Parallel Routing System
Jun Kikuchi
(Hitachi, Japan)
Yoichi Shiraishi
(Gunma Univ., Japan)

An Application of Temperature - Parallel Simulated Annealing -- Block Placements and Their Evaluations --
Kenzo Konishi, Kazuo Taki
(Kobe Univ., Japan)

15:00 - 17:30

Invited Talk (1)
A Survey of Current and Future Research Directions in Parallel CAD
Prithviraj Banerjee
(Univ. of Illinois at Urbana-Champaign, U.S.A.)

PROGRAM OF WORKSHOPS

December 16, Friday *Morning*

Parallel Logic Programming	Automated Theorem Proving	Heterogeneous Cooperative Knowledge-Bases
W1	**W2**	**W3**
Room Shinano (1F)	Room Yodo (1F)	Room Kiso (1F)

W1 — Room Shinano (1F)

9:00 - 10:20

< Session 5: Distributed Systems >

Design and Implementation of a Handy Distributed KLIC System
Kiyofumi Kakiuchi, Masanobu Ookawa, Tatsuya Hagino, Koichi Furukawa, Takashi Hattori
(Keio Univ., Japan)

Reference Loops Management in a Distributed KLIC Implementation
Kazuaki Rokusawa,
Takashi Chikayama, Tetsuro Fujise, Akihiko Nakase
(ICOT, Japan)

10:40 - 12:00

< Session 6: Garbage Collection >

A Parallel Real-time Garbage Collection Scheme for Shared-memory Multiprocessors
Khayri A. M. Ali
(SICS, Sweden)

A Shared-Memory Parallel Extension of KLIC and its Garbage Collection
Nobuyuki Ichiyoshi, Masao Morita
(MRI, Japan)
Takashi Chikayama
(ICOT, Japan)

12:00 - 12:15

< Demonstration >
Demonstration of a Distributed Implementation of KLIC
(ICOT)

W2 — Room Yodo (1F)

[Dec. 15 only]

W3 — Room Kiso (1F)

9:00 - 10:00

Invited Talk (3)
Interoperation, Mediation, and Ontologies
Gio Wiederhold
(Stanford Univ., U.S.A.)

10:20 - 12:00

< Communication and Cooperation >

Learning from Problem Solving and Communication: A Computational Model for Distributed Knowledge Systems
Takao Terano
(Univ. of Tsukuba, Japan)

Strategies for Selecting Communication Structures in Cooperative Search
Shuji Narazaki, Hiroomi Yamamura, Norihiko Yoshida
(Kyushu Univ., Japan)

Communication Resource Sharing in Diffusing Inference
Yasuhiko Kitamura, Ken-ichi Teranishi, Shoji Tatsumi, Takaaki Okumoto
(Osaka City Univ., Japan)

Bridging Humans via Agent Networks
Toru Ishida
(Kyoto Univ., Japan)

PROGRAM OF WORKSHOPS

December 16, Friday *Morning*

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Room Tateyama (3F)	Room Rokko (3F)	Room Hodaka (3F)

W4 — Room Tateyama (3F)

9:30 - 11:30

A kinetics of bacteriorhodopsin reconstituted from three partial polypeptides indicates a new thermodynamic aspect of protein
Yutaka Tsujiuchi
(Akita Univ., Japan)

Sources of Constraints on the Secondary Structure of RNA and tRNA
John S. Conery, Michael Lynch, Hongwen Deng, Qing Tien
(Univ. of Oregon, U.S.A.)

Pseudo Folding Simulation for RNA Secondary Structures Prediction
Minoru Asogawa, Akihiko Konagaya
(RWCP-NEC, Japan)

W5 — Room Rokko (3F)

[Dec. 15 only]

W6 — Room Hodaka (3F)

9:00 - 10:30

< Router/CAD Framework >

A Parallel Slice Maze Router
Hesham Keshk, Shin-ichiro Mori, Hiroshi Nakashima,
Shinji Tomita
(Kyoto Univ., Japan)

A Logic Programming Approach to Channel Routing
Neng-Fa Zhou
(Kyushu Inst. of Technology, Japan)

Automatic Farming Out of LSI CAD Jobs Via a Graphical User Interface
David A. Honig
(Univ. of California, U.S.A.)

11:00 - 12:45

Invited Talk (2)
A Survey of Parallel Logic and Behavioral Simulation Techniques
Michael R. Lightner
(Univ. of Colorado at Boulder)

PROGRAM OF WORKSHOPS

December 16, Friday *Afternoon*

Parallel Logic Programming	Automated Theorem Proving	Heterogeneous Cooperative Knowledge-Bases
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W1 — Room Shinano (1F)

13:40- 15:50

< Session 7: Other Topics >

Literal Dependence Net and Its Use in Concurrent Logic Programming Environment
Jianjun Zhao, Jingde Cheng, Kazuo Ushijima
(Kyushu Univ., Japan)

Automatic Transformation of Deterministic Prolog Programs to KL1
Konstantinos Varsamos
(Univ. of Bristol, U.K.)

Searching Bayes Nets by Exploiting Task Priority
Evan Tick
(Univ. of Oregon, U.S.A.)

Closing

W2 — Room Yodo (1F)

[Dec. 15 only]

W3 — Room Kiso (1F)

13:30 - 15:20

Invited Talk (4)
Agent Organizations for Information Retrieval and Electronic Commerce: The Next Frontier
Les Gasser
(Univ. of Southern California, U.S.A.)

< Application (2) >

Integration of Heterogeneous Knowledge-Bases in Medical Domain
Shusaku Tsumoto, Hiroshi Tanaka
(Tokyo Medical and Dental Univ., Japan)

Heterogeneous Natural Language Understanding in Helios
Hiroshi Tsuda, Akira Aiba
(ICOT, Japan)

15:40 - 16:40

< CSCW >

Dynamic Active Rules in Cooperative Work Environment
Hisayuki Masui, Masakazu Nomoto, Yahiko Kambayashi
(Kyoto Univ., Japan)

Creative Group Decision Support System for Research and Development Management
Susumu Kunifuji, Hideki Nagata, Masayuki Sato, Naotaka Kato
(JAIST, Japan)

Agent-Based Method for Building a Cooperative Knowledge-Based System
Rose Dieng
(INRIA, France)

Closing
Akira Aiba
(ICOT, Japan)

PROGRAM OF WORKSHOPS

December 16, Friday *Afternoon*

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W4	**W5**	**W6**
Room Tateyama (3F)	Room Rokko (3F)	Room Hodaka (3F)

W4 — Room Tateyama (3F)

13:30 - 15:20

Invited Talk (3)
Approaches to Encoding Biochemical Function
Toni Kazic
(Washington Univ. St.Louis, U.S.A.)

A Knowledge Base of Biological Phenomena (Biological Cascades)
Makoto Hirosawa
(Kazusa DNA Research Inst., Japan)
Hidetoshi Tanaka
(ICOT, Japan)
Reiko Tanaka
(IMS, Japan)
Masayuki Akahoshi, Masato Ishikawa
(ICOT, Japan)

Closing

W5 — Room Rokko (3F)

[Dec. 15 only]

W6 — Room Hodaka (3F)

13:45 - 15:30

< Test >

DESCARTES: A Parallel Test Generation System for Sequential Circuits Based on Real-valued Logic Simulation
Hiroshi Date, Michinobu Nakao, Kazumi Hatayama
(Hitachi, Japan)

Performance Evaluation of Parallel Processing for Test Generation
Takaharu Fujii, Tomoo Inoue, Hideo Fujiwara
(NAIST, Japan)

Application of Content Addressable Memory Processor to Pattern Parallel Fault Simulation

A Circuit Partitioning Method for Reducing Rollbacks in Parallel Logic Simulation
Tadashi Seko
(Nara National College of Technology, Japan)
Tohru Kikuno
(Osaka Univ., Japan)

16:00 - 17:30

< Logic Simulation >

Applications of Time Warp Mechanism to LSI-CAD
Yukinori Matsumoto
(Sanyo, Japan)

Parallel Logic Simulators on General-Purpose Parallel Computers -An Asynchronous Method Based on Time Warp and A New Synchronous Method with Loose Synchronization-
Yoshikatsu Ishihara, Kazuo Taki
(Kobe Univ., Japan)

Parallel Logic Simulation Using Speculative Null Message
Koichi Wada
(Univ. of Tsukuba, Japan)
Neo Teck Keng
(YHP, Japan)

Closing