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Logic Programming and Knowledge Representation (LPKR '97)

(Proceedings of the ILPS '97 Postconference Workshop)

Jürgen Dix, Luís Moniz Pereira,
Teodor Przymusinski

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Universität Koblenz-Landau
Fachbereich Informatik
infko

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Universität Koblenz-Landau
Institut für Informatik, Rheinau 1, D-56075 Koblenz
E-mail: researchreports@infko.uni-koblenz.de,
WWW: http://www.uni-koblenz.de/universitaet/fb/fb4/

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Preface

The development of machines that are able to reason and act intelligently is one of the most challenging and desirable tasks ever attempted by humanity. It is therefore not surprising that the investigation of techniques for representing and reasoning about knowledge has become an area of paramount importance to the whole field of Computer Science. Due to logic programming's declarative nature, and its amenability to implementation, it quickly became a prime candidate for a knowledge representation language.

Impressive research progress of the past decade made the role of logic programming as a major knowledge representation tool even more apparent by establishing close relationships between logic programs, deductive databases and other non-monotonic reasoning formalisms. This impressive progress, coupled with the advent of low cost multiprocessor machines and significant advances in logic programming implementation techniques, now provides us with a great opportunity to bring to fruition computationally efficient implementations of extended logic programming and use it as a powerful knowledge representation tool.

This is the third (after ICLP'94 and JICSLP'96) in a series of workshops which we are organizing in conjunction with Logic Programming conferences. However, as shown by the following list of suggested topics, its scope is significantly broader than the previous ones:

LP Functionalities: abduction, communication, contradiction removal, declarative debugging, knowledge and belief revision, learning, reasoning about actions, updates,

LP Integrations: coupling knowledge sources, combining functionalities, logical agent architecture, multi-agents architecture,

LP Language Extensions: constructive default negation, disjunctive programs, default and epistemic extensions, metalevel programming, object-oriented programming, paraconsistency, reactive rules, strong and explicit negation,

LP Applications to Knowledge Representations: heterogeneous databases, model-based diagnosis, modeling production systems, planning, reactive databases, relations to non–monotonic formalisms, software engineering,

LP Implementations: computational procedures, implementations.

Eleven papers were selected out of 17 submissions. We thank the members of the Program Committee and the additional reviewers C. Aravindan, F. Toni and H. Turner.

September 1997

Jürgen Dix, Koblenz
Luís Moniz Pereira, Lisboa
Teodor C. Przymusinski, Riverside

Proceedings

These preliminary proceedings are also available since September 15 from the following address `http://www.uni-koblenz.de/~dix/LPKR97/`. Like for the preceding workshops ([1] and [2]) we plan proceedings to be published by Springer. There will be a separate refereeing process where all participants of the workshop at ILPS will be allowed to submit papers.

[1] J. Dix, L. Pereira, and T. Przymusinski, editors. *Non-Monotonic Extensions of Logic Programming*, LNAI 927, Berlin, 1995. Springer.

[2] J. Dix, L. Pereira, and T. Przymusinski, editors. *Non-Monotonic Extensions of Logic Programming*, LNAI 1216, Berlin, 1997. Springer.

Previous Workshops

1990	WS at NACLP '90, U.S.A.	1991	WS at ILPS '91, U.S.A.
1993	WS at ILPS '93, U.S.A.	1994	WS at ICLP '94, Italy
1996	WS at JICSLP '96, Germany		

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David S. Warren	SUNY at Stony Brook, U.S.A.

Additional Referees

C. Aravindan, F. Toni and H. Turner.

Schedule on Thursday, Oct 16

9.00 – 9.15: OPENING

9.15 – 10.15: SESSION ON UPDATES

- (9.15 - 9.45) J. Leite and L. Pereira:
  Generalizing Updates: From Models to Programs
- (9.45 - 10.15) A. Yahya:
  Updates in Disjunctive Deductive Databases: A Minimal Model Based Approach
- (10.15 - 10.30) Discussion

10.30 - 11.00: COFFEE-BREAK

11.00 - 12.45: SESSION ON ABDUCTION

- (11.00 - 11.30) R. Li, L. Pereira and V. Dahl:
  Refining Action Theories Through Abductive Logic Programming
- (11.30 - 12.00) E. Lamma, M. Milano, P. Mello and F. Riguzzi:
  A System for Learning Abductive Logic Programs
- (12.00 - 12.30) K. Wang:
  Abduction, argumentation and bi-disjunctive LP
- (12.30 - 12.45) Discussion

12.45 - 14.15: LUNCH

14.15 - 15.30: SESSION ON PRIORITIES

- (14.15 - 14.45) G. Brewka:
  Preferred Answer Sets
- (14.45 - 15.15) M. Gelfond and T.C. Son:
  Reasoning with Prioritized Defaults
- (15.15 - 15.30) Discussion

15.30 - 16.00: COFFEE-BREAK

16.00 - 18.30: SESSION ON SEMANTICS

- (16.00 - 16.30) H. Decker:
  A Model Based Semantics for Integrity in Deductive Databases
- (16.30 - 17.00) Greco, N. Leone and F. Scarcello:
  Disjunctive Datalog with Nested Rules
- (17.00 - 17.30) D. Seipel:
  Partial Evidential Stable Models for Disjunctive Databases,
- (17.30 - 18.00) L.-Y. Yuan and J.-H. You:
  An Introspective Logic of Belief
- (18.00 - 18.30): Discussion and Closing