

Preface

This volume contains the papers presented at the “Second International Symposium on Foundations of Information and Knowledge Systems” (FoIKS 2002), which was held in Schloß Salzau, Germany from February 20th to 23rd, 2002.

FoIKS is a biennial event focusing on theoretical foundations of information and knowledge systems. It aims to bring together researchers working on the theoretical foundations of information and knowledge systems and to attract researchers working in mathematical fields such as discrete mathematics, combinatorics, logics, and finite model theory who are interested in applying their theories to research on database and knowledge base theory. FoIKS took up the tradition of the conference series “Mathematical Fundamentals of Database Systems” (MFDBS) which enabled East-West collaboration in the field of database theory. The first FoIKS symposium was held in Burg, Spreewald (Germany) in 2000. Former MFDBS conferences were held in Dresden (Germany) in 1987, Visegrád (Hungary) in 1989, and in Rostock (Germany) in 1991. Proceedings of these previous events were published by Springer-Verlag as volumes 305, 364, 495, and 1762 of the LNCS series.

In addition the FoIKS symposium is intended to be a forum for intensive discussions. For this reason the time slot of long and short contributions is 60 and 30 minutes respectively, followed by 30 and 15 minutes for discussions, respectively. Furthermore, participants are asked in advance to prepare as correspondents to a contribution of another author. There are also special sessions for the presentation and discussion of open research problems.

The FoIKS 2002 call for papers solicited contributions dealing with any foundational aspect of information and knowledge systems, e.g.

- Mathematical Foundations: discrete methods, boolean functions, finite model theory, non-classical logics
- Database Design: formal models, dependency theory, schema translations, desirable properties, design primitives, design strategies
- Query Languages: expressiveness, computational and descriptive complexity, query languages for advanced datamodels, classification of computable queries
- Semi-structured Databases and WWW: models of web databases, querying semi-structured databases, web transactions and negotiations
- Security in Data and Knowledge Bases: cryptography, steganography, information hiding
- Integrity and Constraint Management: constraint checking, verification and validation of consistency, consistency enforcement, triggers
- Information Integration: heterogenous data, views, schema dominance and equivalence

- Data- and Knowledge Base Dynamics: models of transactions, models of interaction, updates in data and knowledge bases, consistency preservation, dynamic consistency, concurrency control, complexity of update propagation
- Intelligent Agents: multi-agent systems, autonomous agents, foundations of software agents, cooperative agents
- Logics in Databases and AI: non-classical logics, temporal logics, non-monotonic logics, spatial logics, probabilistic logics, deontic logic
- Logic Programming: declarative logic programming, constraint programming, inductive logic programming
- Knowledge Representation: planning, description logics, knowledge and belief, belief revision and update, non-monotonic formalisms, uncertainty
- Reasoning Techniques: automated reasoning, satisfiability testing, abduction, induction, theorem proving, constraint satisfaction, common-sense reasoning, probabilistic reasoning, reasoning about actions

The program committee received 55 submissions. Each paper was carefully reviewed by at least three experienced referees. Fifteen papers were chosen for long presentation, two papers for short presentation. This volume contains polished versions of these papers with respect to comments made in the reviews. A few papers will be selected for further extension and publishing in a special issue of the journal “Annals of Mathematics and Artificial Intelligence”.

We would like to thank all authors who submitted papers and all workshop participants for the fruitful discussions. We are grateful to the members of the program committee and the external referees for their timely expertise in carefully reviewing the papers, and we would like to express our thanks to our hosts for the beautiful week in the pleasant surroundings of Schloß Salzau in Holstein.

February 2002

Thomas Eiter
Klaus-Dieter Schewe

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