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Agent Systems, Mobile Agents, and Applications

Second International Symposium
on Agent Systems and Applications
and Fourth International Symposium
on Mobile Agents, ASA/MA 2000
Zurich, Switzerland, September 13-15, 2000
Proceedings



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Preface

This volume contains the proceedings of the Second International Symposium on Agent Systems and Applications and the Fourth International Symposium on Mobile Agents. ASA/MA 2000 took place in Zurich, Switzerland, at the ETH (the Swiss Federal Institute of Technology) on September 13–15, 2000.

In the age of information overload, *agents* have become an important programming paradigm. Agents can act on behalf of users to collect, filter, and process information. They can act autonomously and react to changing environments. Agents are deployed in different settings, such as industrial control, Internet searching, personal assistance, network management, games, and many others.

In our increasingly networked world, *mobile code* is another important programming paradigm. In distributed applications mobile code can improve speed, flexibility, structure, security, or the ability to handle disconnection. Mobile code has been applied to mobile computing, wireless networks, active networks, manufacturing, network management, resource discovery, software dissemination and configuration, and many other situations.

Mobile agents combine the features of agents and mobile-code technologies, and present their own set of challenges. Their use is increasingly explored by an expanding industry.

A full understanding of the capabilities and limits of these technologies (agents, mobile code, and mobile agents) is an open research topic in several communities. This symposium showcases experimental research as well as experiences gained while developing, deploying, and using applications and systems that meet real user needs. Authors were encouraged to include some sort of a quantitative analysis of their application or system. Deployment experience papers were asked to either contain quantitative analysis or a concrete, detailed discussion of the lessons learned from real-world applications or systems. We also encouraged authors of accepted papers to make the source code available, and if possible, to demonstrate the technology.

ASA/MA 2000 is a joint symposium on Agent Systems and Applications (ASA) and Mobile Agents (MA), reflecting the joint interests of those two communities. We retain, in name, the autonomy of those two conferences, although in practice we have a single program and a single program committee. ASA/MA 2000 continues the tradition of last year's symposium (the First International Symposium on Agent Systems and Applications and the Third International Symposium on Mobile Agents, 3–6 October 1999, Palm Springs, California, proceedings published by IEEE), which in turn continued the series of International Mobile Agents Workshops MA'98 (Stuttgart, Germany) and MA'97 (Berlin, Germany). Further information on the ASA/MA 2000 Symposium may be found on the Symposium web site www.inf.ethz.ch/ASA-MA/.

The program committee of ASA/MA 2000 chose the best possible papers from five main areas:

- agent applications
- agent systems
- multi-agent systems
- mobile agents
- mobile code

with a focus on the following topics:

- development tools
- security
- scalability
- fault tolerance
- communication, collaboration and coordination
- languages
- standards
- design patterns
- applications in mobile computing and wireless networks
- applications in electronic markets and commerce
- applications in active networks
- market-based control
- resource management
- agent societies and ensembles
- World-Wide-Web integration

We received 107 submissions from authors all over the world, and chose 20 papers for inclusion in the symposium. It was a difficult choice, based on 537 reviews produced by the program committee and by a collection of 32 outside referees. Each paper was reviewed by at least three people, and in some cases four or five people. The typical paper was reviewed by two program committee members and one outside reviewer. The submission and reviewing process was managed with the WIMPE conference-management package written by David Nicol at Dartmouth College. It is an invaluable tool, extremely useful for online paper submission and reviewing.

The program committee met in Boston on 1 May to examine all of the reviews and select the final 20 papers. Using the numerical rankings as a guide, we discussed each paper, and occasionally re-read a paper, until we were sure that we had the best selection. Two papers had been co-authored by program committee members who were present at the meeting; during the discussion of their papers they were asked to leave the room. One such paper was accepted one was not.

Every accepted paper was assigned a member of the program committee to supervise the revision process, to make sure that the referees' comments were addressed and to add additional feedback on the later drafts of the paper. This extra measure of quality control leads, we believe, to the very strong set of papers you see here.

In addition to the papers contained in these proceedings, the symposium program included invited presentations, tutorials, workshops, and a poster session. We chose not to accept any submitted papers directly into the poster session. Instead, a separate "Call for Posters" was sent in July to allow all authors, as well as anyone with late-breaking projects, to participate.

We would like to express our appreciation to the authors of the submitted papers, and we deeply thank all members of the program committee and the

external reviewers for their effort and their valuable input. We would also like to express our thanks to Springer-Verlag for the excellent cooperation, to IBM who sponsored the event, and to the organizing staff at ETH Zurich, in particular Jürgen Bohn and Marc Langheinrich.

July 2000

David Kotz, Friedemann Mattern

Organization

The Joint Symposium on Agent Systems and Applications / Mobile Agents (ASA/MA 2000) took place in Zurich, Switzerland on September 13–15, 2000. It was organized by ETH Zurich, the Swiss Federal Institute of Technology.

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Table of Contents

Invited Talk

Data or Computation – Which Should We Move?	1
<i>Colin G. Harrison</i>	

Migration

Strong Mobility and Fine-Grained Resource Control in NOMADS	2
<i>Niranjan Suri, Jeffrey M. Bradshaw, Maggie R. Breedy, Paul T. Groth, Gregory A. Hill and Renia Jeffers</i>	
Bytecode Transformation for Portable Thread Migration in Java	16
<i>Takahiro Sakamoto, Tatsuro Sekiguchi and Akinori Yonezawa</i>	
Portable Support for Transparent Thread Migration in Java	29
<i>Eddy Truyen, Bert Robben, Bart Vanhaute, Tim Coninx, Wouter Joosen and Pierre Verbaeten</i>	

Security Issues of Mobile Agents

Secure Mobile Agent-Based Merchant Brokering in Distributed Marketplaces	44
<i>Günter Karjoth</i>	
Solving Fair Exchange with Mobile Agents	57
<i>Henning Pagnia, Holger Vogt, Felix C. Gärtner and Uwe G. Wilhelm</i>	

Systems and Applications

Principles of Mobile Maude	73
<i>Francisco Durán, Steven Eker, Patrick Lincoln and José Meseguer</i>	
Secure Dynamic Reconfiguration of Scalable CORBA Systems with Mobile Agents	86
<i>Fabio Kon, Binny Gill, Manish Anand, Roy Campbell and M. Dennis Mickunas</i>	
The Bond Agent System and Applications	99
<i>Ladislau Bölöni, Kyungkoo Jun, Krzysztof Palacz, Radu Sion and Dan C. Marinescu</i>	

Mobile Agent Applications

MobiDoc: A Framework for Building Mobile Compound Documents from Hierarchical Mobile Agents	113
<i>Ichiro Satoh</i>	
Distributed Collaborations Using Network Mobile Agents	126
<i>Anand Tripathi, Tanvir Ahmed, Vineet Kakani and Shremattie Jaman</i>	
Using Adaptation and Organisational Knowledge to Coordinate Mobile Agents	138
<i>Steven Willmott and Boi Faltings</i>	

Applications of Multi-agent Systems

Multiple Agent-Based Autonomy for Satellite Constellations	151
<i>Thomas Schetter, Mark Campbell and Derek Surka</i>	
Saving Energy and Providing Value Added Services in Intelligent Buildings: A MAS Approach	166
<i>Paul Davidsson and Magnus Boman</i>	
CarPACities: Distributed Car Pool Agencies in Mobile Networks	178
<i>Steffen Rothkugel and Peter Sturm</i>	

Communication and Mobility Control

Quantitative Evaluation of Pairwise Interactions between Agents	192
<i>Takahiro Kawamura, Sam Joseph, Akihiko Ohsuga and Shinichi Honiden</i>	
A Reliable Message Delivery Protocol for Mobile Agents	206
<i>Mudumbai Ranganathan, Marc Bednarek and Doug Montgomery</i>	
Monitoring-Based Dynamic Relocation of Components in FarGo	221
<i>Hovav Gazit, Israel Ben-Shaul and Ophir Holder</i>	

Cooperation and Interaction

Agent-Based Negotiations for Multi-provider Interactions	235
<i>Monique Calisti and Boi Faltings</i>	
Modeling Soccer-Robots Strategies through Conversation Policies	249
<i>Pierre-Yves Oudeyer and Jean-Luc Koning</i>	
Using Intelligent Agents and a Personal Knowledge Management Application	262
<i>Marja Phipps, Jay Mork and Mark McSherry</i>	

Author Index	275
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