Lecture Notes in Computer Science 1961
Edited by G. Goos, J. Hartmanis and J. van Leeuwen
Springer

Berlin
Heidelberg
New York
Barcelona
Hong Kong
London
Milan
Paris
Singapore
Tokyo
Preface

The Asian Computing Science Conference (ASIAN) series was initiated in 1995 to provide a forum for researchers in computer science in Asia to meet and to promote interaction with researchers from other regions. The previous five conferences were held, respectively, in Bangkok, Singapore, Kathmandu, Manila, and Phuket. The proceedings were published in the Lecture Notes in Computer Science Series of Springer-Verlag.

This year’s conference (ASIAN 2000) attracted 61 submissions from which 18 papers were selected through an electronic program committee (PC) meeting.

The themes for this year’s conference are:

- Logics in Computer Science
- Data Mining
- Networks and Performance

The key note speaker for ASIAN 2000 is Jean Vuillemin (ENS, France) and the invited speakers are Ramamohanarao Kotagiri (U. Melbourne, Australia) and Alain Jean-Marie (LIRMM, France). We thank them for accepting our invitation.

This year’s conference is sponsored by the Asian Institute of Technology (Thailand), INRIA (France), the National University of Singapore (Singapore), and UNU/IIST (Macau SAR, China). We thank all these institutions for their continued support of the ASIAN series.

This year’s conference will be held in Penang, Malaysia. We are much obliged to Universiti Sains Malaysia and Penang State Government for providing the conference venue and to Dr. Abdullah Zawawi Haji Talib for making the local arrangements.

We also wish to thank the PC members and the large number of referees for the substantial work put in by them in assessing the submitted papers.

Finally, it is a pleasure to acknowledge the friendly and efficient support provided by Alfred Hofmann and his team at Springer-Verlag in bringing out this volume.

October 2000

He Jifeng
Masahiko Sato
Program Committee

Yuxi Fu (Shanghai Jiao Tong U., China)
Ian Graham (U. of Waikato, New Zealand)
He Jifeng (co-chair) (UNU/IIST, Macau SAR, China)
Alain Jean-Marie (LIRMM, France)
Kazunori Konishi (KDD, Japan)
Bing Liu (NUS, Singapore)
Zhen Liu (INRIA, France)
Ian Mason (U. of New England, Australia)
Yasuhiro Morimoto (IBM Tokyo, Japan)
Mitsu Okada (Keio U., Japan)
Luke Ong (Oxford U., UK)
Masahiko Sato (co-chair) (Kyoto U., Japan)
Kyuseok Shim (KAIST, Korea)

General Chair

Joxan Jaffar (National University of Singapore, Singapore)

Local Chair

Dr. Abdullah Zawawi Haji Talib (Universiti Sains Malaysia, Malaysia)

Steering Committee

Shigeki Goto (Waseda U., Japan)
Stephane Grumbach(INRIA, France)
Joxan Jaffar (NUS, Singapore)
Gilles Kahn (INRIA, France)
Kanchana Kanchanasut (AIT, Thailand)
R.K. Shyamasundar (TIFR Bombay, India)
Kazunori Ueda (Waseda U., Japan)
Zhou Chaochen (UNU/IIST, Macau SAR, China)

Referees

Yohji Akama
Takeshi Fukuda
Chris George
Andy Gordon
John Harrison
Yuichiro Hei
Kohei Honda
Wynne Hsu
Dang Van Hung
T. Iida
Takeuti Izumi
Tomasz Janowski

Yukiyoshi Kameyama
Yoji Kishi
Yoshinori Kitatsuji
Naoki Kobayashi
Satoshi Konishi
<table>
<thead>
<tr>
<th>Shinji Kono</th>
<th>Franz Puntigam</th>
<th>Yoshiiito Toyama</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yiming Ma</td>
<td>Alexander Rabinovich</td>
<td>Christian Urban</td>
</tr>
<tr>
<td>M. Marin</td>
<td>Chiaki Sakama</td>
<td>Osamu Watanabe</td>
</tr>
<tr>
<td>Hirofumi Matsuzawa</td>
<td>Etsuya Shibayama</td>
<td>H. Wu</td>
</tr>
<tr>
<td>Masaki Murakami</td>
<td>Tetsuo Shibuya</td>
<td>Xu Qiwen</td>
</tr>
<tr>
<td>Yuko Murayama</td>
<td>Keizo Sugiyama</td>
<td>Yiyuan Xia</td>
</tr>
<tr>
<td>Hiroshi Nakano</td>
<td>Taro Suzuki</td>
<td>Mitsuharu Yamamoto</td>
</tr>
<tr>
<td>Susumu Nishimura</td>
<td>Koichi Takahashi</td>
<td>Tetsushi Yamashita</td>
</tr>
<tr>
<td>Hiroyuki Okano</td>
<td>Makoto Tatsuta</td>
<td>Roland Yap</td>
</tr>
<tr>
<td>M. Parigot</td>
<td>Atsushi Togashi</td>
<td></td>
</tr>
</tbody>
</table>
# Table of Contents

Finite Digital Synchronous Circuits Are Characterized by 2-Algebraic Truth Tables ............................................................ 1  
Jean Vuillemin

Performance Evaluation of Networks: New Problems and Challenges ...... 13  
Alain Jean-Marie

Emerging Patterns and Classification ........................................ 15  
Jinyan Li, Kotagiri Ramamohanarao, Guozhu Dong

IPv6 Performance Analysis on FreeBSD Workstation Using Simple Applications .................................................... 33  
K. Ettikan, V. Ganapathy

Performance of Location Caching Scheme to Support Call Locality in Wireless Networks ......................................................... 43  
DongChun Lee, JeomGoo Kim, JooSeok Song

A Practical Parity Scheme for Tolerating Triple Disk Failures in RAID Architectures ................................................................. 58  
Chong-Won Park, Young-Yearl Han

Genetic Algorithm for Extended Cell Assignment Problem in Wireless ATM Network ................................................................. 69  
Der-Rong Din, Shian–Shyong Tseng, Mon-Fong Jiang

Spatial Congruence for Ambients Is Decidable .............................. 88  
Silvano Dal Zilio

A Spatio-temporal Representation Scheme for Modeling Moving Objects in Video Data ............................................................... 104  
Choon-Bo Shim, Jae-Woo Chang

Node-to-Set Disjoint Paths Problem in Rotator Graphs .................... 119  
Keisichi Kaneko and Yasuto Suzuki

On Simulation-Checking with Sequential Systems .......................... 133  
Antoniú Kućera

Reusing Animations in Databases for Multimedia Presentations ........... 149  
Zhiyong Huang, Binjia Jiao, B. Prabhakaran, Conrado R. Ruiz, Jr.
# Table of Contents

Reflecting BDDs in Coq  
*Kumar Neeraj Verma, Jean Goubault-Larrecq, Sanjiva Prasad, S. Arun-Kumar*

162

On Model Checking Synchronised Hardware Circuits  
*Martin Leucker*

182

*Pierpaolo Degano, Francesca Levi, Chiara Bodei*

199

Security Types for Mobile Safe Ambients  
*M. Dezani-Ciancaglini, I. Salvo*

215

Improving Functional Logic Programs by Difference-Lists  
*Elvira Albert, César Ferri, Frank Steiner, Germán Vidal*

237

A New Multihop Logical Topology for Reliable Broadband Communication  
*U. Bhattacharya, R. Chaki*

255

A New Scalable Topology for Multihop Optical Networks  
*U. Bhattacharya, R. Chaki*

263

On Computable Tree Functions  
*Masahiro Kimoto, Masako Takahashi*

273

Sharpening the Undecidability of Interval Temporal Logic  
*Kamal Lodaya*

290

**Author Index**  

299