# Table of Contents

**TASE 2007**

**Message from the Program Chairs** ................................................................. ix

**Conference Organization and Committees** ................................................... x

**Reviewers** ........................................................................................................... xii

---

**Tutorial**

Varieties of Static Analyzers: A Comparison with ASTRÉE .................................................. 3

*Patrick Cousot, Radhia Cousot, Jérôme Feret, Antoine Miné, Laurent Mauborgne, David Monniaux, and Xavier Rival*

---

**Keynote Speech Abstracts**

Software Security ............................................................................................................. 21

*Jeannette M. Wing*

Abstractions for Real Real-Time Systems ........................................................................ 22

*Mathai Joseph*

---

**Verification and Validation 1**

Symmetry Reduced Model Checking for B ........................................................................ 25

*Edward Turner, Michael Leuschel, Corinna Spermann, and Michael Butler*

Multi-Valued Model Checking via Groebner Basis Approach ........................................ 35

*Jinzhao Wu and Lin Zhao*

Model Checking Software at Compile Time ...................................................................... 45

*Ansgar Fehnker, Ralf Huuck, Patrick Jayet, Michel Lussenburg, and Felix Rauch*

---

**Formal Methods 1**

An Approach Based on Bigraphical Reactive Systems to Check Architectural Instance
Conforming to its Style ...................................................................................................... 57

*Zhiming Chang, Xinjun Mao, and Zhichang Qi*

A Formal Derivation of Grover’s Quantum Search Algorithm ......................................... 67

*Paolo Zuliani*

Unified Modeling and Analysis Based on Petri Nets and Pi Calculus .............................. 75

*Fei Xu and Li Zhang*
An Interpreter for Framed Tempura and its Application ................................................................. 251
Yongtao Ma, Zhenhua Duan, Xiaobing Wang, and Xiaoxiao Yang

Goal-Independent Semantics for Path Dependent Analysis of Prolog Programs ........................................ 261
Lingzhong Zhao, Tianlong Gu, and Junyan Qian

Software Architecture and Frameworks 2
A Logical Framework for Monitoring and Evolving Software Components ........................................ 273
Howard Barringer, David Rydeheard, and Dov Gabbay

Commutability of Design Pattern Instantiation and Integration ............................................................ 283
Jing Dong, Tu Peng, and Zongyan Qiu

Timing and Concurrency Specification in Component-Based Real-Time Embedded Systems Development .................................................. 293
Hung Ledang and Dang Van Hung

Safety and Reliability
Automating Language Evolution........................................................................................................... 305
Markus Pizka and Elmar Jürgens

Synthesis of Optimal-Cost Dynamic Observers for Fault Diagnosis of Discrete-Event Systems .................. 316
Franck Cassez, Stavros Tripakis, and Karine Altisen

Foundational Typed Assembly Language with Certified Garbage Collection .......................................... 326
Chunxiao Lin, Andrew McCreight, Zhong Shao, Yiyun Chen, and Yu Guo

Verification and Validation 3
Evaluation of SAT-Based Bounded Model Checking of ACTL Properties ............................................ 339
Yanyan Xu, Wei Chen, Liang Xu, and Wenhui Zhang

Specification-Based Test Generation and Optimization Using Model Checking.......................................... 349
Hongwei Zeng, Huaikou Miao, and Jing Liu

Streaming State Space: A Method of Distributed Model Verification ................................................... 356
Viliam Holub and Petr Tuma

Formal Methods 3
A Formal Approach to Aspect-Oriented Modular Reconfigurable Computing ........................................ 369
Phan Cong-Vinh and Jonathan P. Bowen

Realizing Live Sequence Charts in SystemVerilog .................................................................................. 379
Hai H. Wang, Shengchao Qin, Jun Sun, and Jin Song Dong

QCCS: A Formal Model to Enforce QoS Requirements in Service Composition ........................................ 389
Sun Meng

Software Architecture and Frameworks 3
A Software Process for Modeling Complex Systems with UML-RT....................................................... 401
Yifeng Sun and David Levy

Consistency and Minimality of UML Class Specifications with Multiplicities and Uniqueness Constraints ..................................................................................................................... 411
Ingo Feinerer and Gernot Salzer
Survivability-Aware Configuration Management of Service-Oriented System
Based on Service Dependency

Tun Lu and Ning Gu

Formal Methods 4
Improving Combinability of Petri Nets with Inheritance, Aggregation and Association
Shengyuan Wang and Yuan Dong

Dynamics of Control
Jeffrey W. Sanders and Matteo Turilli

Symmetry in Process Algebra
Jianmin Jiang, Jinzhao Wu, and Hongping Shu

Service Systems
Constraint-Based Policy Negotiation and Enforcement for Telco Services
Maria Grazia Buscemi, Laura Ferrari, Corrado Moiso, and Ugo Montanari

Conformance Validation between Choreography and Orchestration
Jing Li, Huibiao Zhu, and Geguang Pu

QoS-Driven Service Composition Modeling with Extended Hierarchical CPN
Wen-jun Li, Xiao-jun Liang, Hua-mei Song, and Xiao-cong Zhou

Author Index

viii