

1. Record Nr.	UNISA996465487303316
Titolo	Software Technologies: Applications and Foundations [[electronic resource]] : STAF 2017 Collocated Workshops, Marburg, Germany, July 17-21, 2017, Revised Selected Papers // edited by Martina Seidl, Steffen Zschaler
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-74730-4
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (XXIV, 418 p. 133 illus.)
Collana	Programming and Software Engineering ; ; 10748
Disciplina	004
Soggetti	Software engineering Programming languages (Electronic computers) Computer programming Artificial intelligence Special purpose computers User interfaces (Computer systems) Software Engineering Programming Languages, Compilers, Interpreters Programming Techniques Artificial Intelligence Special Purpose and Application-Based Systems User Interfaces and Human Computer Interaction
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- STAF 2017 Organizer's Message -- BigMDE 2017 Organizers' Message -- GCM 2017 Organizers' Message -- GRAND 2017 Organizers' Message -- MORSE 2017 Organizers' Message -- OCL 2017 Organizers' Message -- Projects Showcase 2017 Organizers' Message -- Contents -- Scalable Model Driven Engineering (BigMDE) -- Injecting Execution Traces into a Model-Driven Framework for Program Analysis -- 1 Introduction -- 2 Approach -- 2.1 Model Driven Reverse Engineering -- 2.2 Model Transformation -- 2.3 Code Instrumentation

-- 2.4 Execution and Completion -- 3 Evaluation -- 3.1 Execution Environment -- 3.2 Discussion -- 4 Related Work -- 5 Conclusion and Future Works -- References -- Introduction of an OpenCL-Based Model Transformation Engine -- 1 Introduction -- 2 Related Work -- 3 Parallel Multiplatform Model-Transformation Engine -- 3.1 The Representation of the Domain Model -- 3.2 Steps of the Approach -- 3.3 Illustrating the Topological Match -- 4 Conclusion and Future Work -- References -- Collaborative Modelling with Version Control -- Abstract -- 1 Introduction -- 2 Background and Related Research -- 2.1 Two Ways to Collaborate -- 2.2 Research on the "Clone and Merge" Approach -- 2.3 Research on the "Share and Lock" Approach -- 3 Current State of the Art -- 3.1 Clone and Merge: EMF Compare + EGit -- 3.2 Share and Lock: MetaEdit+ -- 4 Comparison Functionality in a Modelling Tool -- 4.1 View Changes as a Tree -- 4.2 Graphical Comparison to Highlight Changes -- 4.3 Textual Comparison with Model Links -- 5 Version Control System Integration -- 5.1 What to Version and How -- 6 Conclusions -- Acknowledgments -- References -- A Java Bytecode Metamodel for Composable Program Analyses -- 1 Introduction -- 2 Motivation -- 2.1 Motivating Example -- 2.2 Implementing Program Analyses with a Bytecode Toolkit -- 2.3 Composing the Toolkit-Based Analyses. 2.4 Problem Statement -- 3 Java Bytecode Metamodel -- 3.1 Structure of Java Bytecode Metamodel -- 3.2 JBCPP Plug-in -- 4 Related Work -- 5 Conclusion -- References -- Graph Computation Models (GCM) -- Graph Rewriting Based Search for Molecular Structures: Definitions, Algorithms, Hardness -- 1 Introduction -- 2 Definitions and Summary of the Results -- 3 Related Work -- 4 Normal Form of the Rules -- 5 An Algorithm for the Subgraph Matching -- 5.1 An Exponential Algorithm -- 5.2 Reducing the Number of Considered Subsets -- 6 NP-completeness for Rules of Unbounded Degree on Stars -- 7 W[1]-Hardness in the Degree for Trees -- 8 Estimating the Size of the DP-Table in a Large Database -- 9 Conclusion -- References -- Towards Automatic Generation of Evolution Rules for Model-Driven Optimisation -- 1 Introduction -- 2 Related Work -- 3 Running Example -- 4 Searching Optimal Models with Generated Rules -- 4.1 Specifying the Optimisation Problem -- 4.2 Generating the Rules -- 4.3 Running the Optimisation -- 5 Evaluation -- 6 Conclusions and Outlook -- References -- Generating Efficient Predictive Shift-Reduce Parsers for Hyperedge Replacement Grammars -- 1 Introduction -- 2 Hyperedge Replacement Grammars -- 3 Predictive Shift-Reduce Parsing for HR Grammars -- 4 Conflict Analysis -- 5 Efficient Implementation of PSR Parsers -- 6 Evaluation of Generated PSR Parsers -- 7 Conclusions -- References -- Checking Graph Programs for Confluence -- 1 Introduction -- 2 Graphs and Graph Programs -- 3 Symbolic Critical Pairs -- 4 Symbolic Rewriting and Joinability -- 4.1 Symbolic Rewriting -- 4.2 Joinability -- 5 Case Study: Shortest Distances -- 6 Local Confluence -- 7 Conclusion -- References -- Loose Graph Simulations -- 1 Introduction -- 2 Hosts, Guests and Loose Graph Simulations -- 3 An Algebra for Guests -- 4 The LGS Problem is NP-complete. 4.1 NP-Hardness: Subgraph Isomorphisms via LGSs -- 5 Graph Simulations Are Loose Graph Simulations -- 6 Regular Languages Pattern Matching -- 7 Subgraph Isomorphism with Regular Path Expressions -- 8 A Polynomial Fragment of LGSs -- 9 Conclusions and Future Work -- References -- Grand Challenges in Modeling (GRAND) -- Models, More Models, and Then a Lot More -- 1 Introduction -- 2 The Expanding Universe of MDE -- 3 Treating MDE Artefacts as Data -- 4 Relevant Domains for Model Analytics -- 5 Conclusion -- References -- On the Need for Temporal Model Repositories -- 1 Introduction --

1.1 Why Temporal Model Repositories are Needed -- 1.2 Existing Work on Temporal Artifacts -- 1.3 Structure of this Paper -- 2 Motivating Example -- 3 Temporal Model Repositories Challenges -- 3.1 Model Storage -- 3.2 Model Consistency -- 3.3 Model Access -- 3.4 Model Manipulation -- 3.5 Model Visualization -- 3.6 Further Challenges -- 4 Conclusions -- References -- On the Need for Artifact Models in Model-Driven Systems Engineering Projects -- 1 Motivation -- 2 Modeling Artifact Relations -- 3 Example -- 4 State of the Art -- 5 Challenges of Artifact Modeling -- 6 Conclusion -- References -- Cognifying Model-Driven Software Engineering -- 1 Introduction -- 2 Opportunities in the Cognification of MDSE -- 2.1 Modeling Bots -- 2.2 Model Inferencers -- 2.3 Smart Code Generators -- 2.4 Real-Time Model Reviewers -- 2.5 Advanced Self-morphing and Collaborative Modeling Tools -- 2.6 Semantic Reasoning Platforms, Explainability and Storification -- 2.7 Scalable Model and Data Fusion Engine -- 3 Model-Driven Engineering of AI and Knowledge-Aware Software -- 4 Conclusions and Challenges -- References -- Non-human Modelers: Challenges and Roadmap for Reusable Self-explanation -- 1 Introduction -- 2 Discussed Topics -- 3 Background for Reusable Self-explanation -- 3.1 Traceability. 3.2 Model Versioning -- 3.3 Provenance -- 4 Example Scenario -- 4.1 Scenario Description -- 4.2 Approach for Reusable Self-explanation -- 5 Research Roadmap -- 6 Conclusion -- References -- Some Narrow and Broad Challenges in MDD -- 1 Introduction -- 2 Challenges for Model and Transformation Properties -- 3 Challenges for the Development Process -- 4 Conclusion -- References -- Modelling by the People, for the People -- Abstract -- 1 Introduction -- 2 Developments in Developer Demographics -- 3 Libraries, Frameworks and Languages -- 4 Related Research -- 5 Conclusion -- References -- From Building Systems Right to Building Right Systems -- Abstract -- 1 Introduction -- 2 Overview of Proposed Approach -- 3 Research Agenda -- 4 Exemplars -- 4.1 Digital Manufacturing -- 4.2 Integrated Computational Materials Engineering (ICME) -- 4.3 Model Driven Organisation (MDO) -- 5 Summary -- References -- The Tool Generation Challenge for Executable Domain-Specific Modeling Languages -- 1 Introduction -- 2 The Vision of Automated Tool Development -- 3 Open Challenges Towards Tool Generation -- 4 Conclusion -- References -- Toward Product Lines of Mathematical Models for Software Model Management -- 1 Introduction: Why Product Lines -- 2 Background: Why Abstract Models and Declarative Semantics -- 2.1 "And Suddenly the Tool Doesn't Do Something Expected, and It Is a Nightmare for Them" -- 2.2 Modelling Culture and Teaching It -- 2.3 Completeness of Classifications/Design Spaces -- 3 Model Synchronization and Its Challenges -- 3.1 A Sketch of (Symmetric) Delta Lenses -- 3.2 Organizational Symmetry and Organized Delta Lenses -- 3.3 Four Technical Challenges -- 4 Conclusion: Grand Challenges -- References -- Model-Driven Robot Software Engineering (MORSE) -- Model-Driven Interaction Design for Social Robots -- 1 Introduction -- 2 Project Description. 3 Problem Description & Stakeholders -- 4 Future Work -- 5 Conclusion -- References -- Towards Integration of Context-Based and Scenario-Based Development -- 1 Introduction -- 2 Scenario-Based Programming with Live Sequence Charts -- 3 Context-Based Specifications -- 4 Context-Based Design in Native LSC -- 5 Towards Intuitive Organization of Context-Based Specifications -- 6 Research on New Language Idioms -- References -- (An Example for) Formally Modeling Robot Behavior with UML and OCL -- 1 Introduction -- 2 A UML and OCL Model for a Production Line with Robotized Arms -- 3

Related Work -- 4 Conclusions and Future Work -- References --
Synthesizing Executable PLC Code for Robots from Scenario-Based GR
(1) Specifications -- 1 Introduction -- 2 Example -- 3 Scenario-Based
Modeling -- 4 Controller Synthesis -- 4.1 Play-Out -- 4.2 Synthesis --
5 Generating Executable Code -- 5.1 Pre-processing the Controller --
5.2 Generating Structured Text -- 5.3 Extensions -- 6 Related Work --
7 Conclusion -- References -- Evaluating a Graph Query Language for
Human-Robot Interaction Data in Smart Environments -- 1 Introduction
-- 2 Language Modeling -- 3 Workbench Evaluation -- 3.1 Study
Design -- 3.2 Tasks -- 3.3 Participant Preconditions -- 3.4
Questionnaire -- 3.5 Expectations -- 4 Pilot Study Results -- 5
Discussion and Lessons Learned -- 6 Related Work -- 7 Conclusion
and Outlook -- References -- A Simulation Framework to Analyze
Knowledge Exchange Strategies in Distributed Self-adaptive Systems --
1 Introduction -- 2 A Simulation Infrastructure for Knowledge
Exchange Strategies -- 2.1 Siafu Simulator -- 2.2 Concepts -- 2.3
Measurements -- 2.4 Extensibility -- 3 Evaluation -- 3.1 Running
Example -- 3.2 Time Measurement -- 3.3 Knowledge Exchange -- 3.4
Results -- 4 Related Work -- 5 Conclusion and Future Work --
References -- OCL and Textual Modeling (OCL).
Workshop in OCL and Textual Modelling.

Sommario/riassunto

This book contains the thoroughly refereed technical papers presented in six workshops collocated with the International Conference on Software Technologies: Applications and Foundations, STAF 2017, held in Marburg, Germany, in July 2017. The 15 full and 22 short papers presented were carefully reviewed and selected from 37 submissions. The events whose papers are included in this volume are: BigMDE 2017: 5th International Workshop on Scalable Model Driven Engineering GCM 2017: 8th International Workshop on Graph Computation Models GRAND 2017: 1st International Workshop on Grand Challenges in Modeling MORSE 2017: 4th International Workshop on Model-driven Robot Software Engineering OCL 2017: 17th International Workshop in OCL and Textual Modeling STAF Projects Showcase 2017: 3rd event dedicated to international and national project dissemination and cooperation.
