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Software Engineering
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Publications:

A Domain-Specific Language for Generic Interlocking Models and Their Properties
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Compositional Model Checking of Interlocking Systems for Lines with Multiple Stations
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Compositional Verification of Interlocking Systems for Large Stations
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Formal Development and Verification of Safe Railway Control Systems
Publication: Research › Poster – Annual report year: 2017

Formal modelling and verification of interlocking systems featuring sequential release
Publication: Research - peer-review › Journal article – Annual report year: 2016

Model Checking Geographically Distributed Interlocking Systems Using UMC
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Comparing formal verification approaches of interlocking systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Compositional Verification of Multi-Station Interlocking Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Formal Development and Verification of Safe Railway Control Systems
Publication: Research - peer-review › Poster – Annual report year: 2016

On the Feasibility of a Unified Modelling and Programming Paradigm
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

On the Use of Static Checking in the Verification of Interlocking Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016
SaRDIn - A Safe Reconfigurable Distributed Interlocking
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

SaRDIn - A Safe Reconfigurable Distributed Interlocking
Publication: Research - peer-review › Poster – Annual report year: 2016

Formal Development and Verification of Railway Control Systems - In the context of ERTMS/ETCS Level 2
Publication: Research › Ph.D. thesis – Annual report year: 2015

Formal Modeling and Verification of Interlocking Systems Featuring Sequential Release
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Model Checking and Model-based Testing in the Railway Domain
Publication: Research › Book chapter – Annual report year: 2015

A SysML Test Model and Test Suite for the ETCS Ceiling Speed Monitor: Technical report, Work Package 4
Publication: Research › Report – Annual report year: 2014

A Domain-Specific Language for Railway Interlocking Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

An Institution for Imperative RSL Specifications
Publication: Research - peer-review › Book chapter – Annual report year: 2014

Applied Bounded Model Checking for Interlocking System Designs
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Automated generation of formal safety conditions from railway interlocking tables
Publication: Research - peer-review › Journal article – Annual report year: 2014

Complete Model-Based Equivalence Class Testing for the ETCS Ceiling Speed Monitor
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

FM-RAIL-BOK organizers' message
Publication: Research - peer-review › Preface/postscript – Annual report year: 2014

Formal Modeling and Verification of Interlocking Systems Featuring Sequential Release
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Formal Verification of the Danish Railway Interlocking Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Applied Bounded Model Checking for Interlocking System Designs
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

A Rigorous Methodology for Analyzing and Designing Plug-Ins
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Efficient Development and Verification of Safe Railway Control Software
Publication: Research - peer-review › Book chapter – Annual report year: 2013
Specification, proof, and model checking of the Mondex electronic purse using RAISE
Publication: Research - peer-review › Journal article – Annual report year: 2008

The Logic of the RAISE Specification Language
Publication: Research - peer-review › Book chapter – Annual report year: 2008

A Domain-oriented, Model-based Approach for Construction and Verification of Railway Control Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2007

Object Code Verification for Safety-Critical Railway Control Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2007

Specification, Proof, and Model-checking of the Mondex Electronic Purse using RAISE
Publication: Research - peer-review › Report – Annual report year: 2007

Specification and Proof of the Mondex Electronic Purse
Publication: Research - peer-review › Article in proceedings – Annual report year: 2006

Specification and Proof of the Mondex Electronic Purse
Publication: Research - peer-review › Article in proceedings – Annual report year: 2006

Designing a Flexible Kernel Providing VDM++ Support for Eclipse
Publication: Research › Article in proceedings – Annual report year: 2005

Test of Object-oriented Software
Publication: Education › Compendium/lecture notes – Annual report year: 2005

Proof support for RAISE - by a Reuse Approach Based on Institutions
Publication: Research › Ph.D. thesis – Annual report year: 2004

Automated Verification for Train Control Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2004

CASL Semantics
Publication: Research - peer-review › Book chapter – Annual report year: 2004

From Domain Model to Domain-specific Language for Railway Control Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2004

Modelling and Verification of Interlocking Systems for Railway Lines
Publication: Research - peer-review › Article in proceedings – Annual report year: 2003

Proof Support for RAISE - by a Reuse Approach based on Institutions
Publication: Research - peer-review › Article in proceedings – Annual report year: 2004

Test of Object-oriented Software
Publication: Education › Compendium/lecture notes – Annual report year: 2004

UML-ising formal techniques
Publication: Research - peer-review › Book chapter – Annual report year: 2004
"UML-ising" Formal Techniques
Publication: Research - peer-review › Article in proceedings – Annual report year: 2004

Automatic Verification, Validation and Test for Railway Control Systems based on Domain-Specific Descriptions
Publication: Research - peer-review › Article in proceedings – Annual report year: 2003

CASL, the Common Algebraic Specification Language: Semantics and Proof Theory
Publication: Research - peer-review › Journal article – Annual report year: 2003

Generation of Executable Railway Control Components from Domain-Specific Descriptions
Publication: Research - peer-review › Article in proceedings – Annual report year: 2003

The Logic of the RAISE Specification Language
Publication: Research - peer-review › Journal article – Annual report year: 2003

A Domain Specific Language for Railway Control Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2002

Formal development and verification of a distributed railway control system
Publication: Research - peer-review › Journal article – Annual report year: 2000

Formal Methods for the Specification and Verification of Distributed Railway Control Systems: From Algebraic Specifications to Distributed Hybrid Real-Time Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2000

Linking DC together with TRSL
Publication: Research - peer-review › Article in proceedings – Annual report year: 2000

Modelling Railway Interlocking Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2000

Some Approaches for Integration of Specification Techniques
Publication: Research - peer-review › Article in proceedings – Annual report year: 2000

Subsorted Partial Higher-order Logic as an extension of CASL
Publication: Research - peer-review › Article in proceedings – Annual report year: 2000

Towards Domain-Specific Formal Specification Languages for Railway Control Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2000

CASL - The CoFI Algebraic Specification Language - Semantics.
Publication: Research - peer-review › Report – Annual report year: 1999

Formal Development and Verification of a Distributed Railway Control System
Publication: Research - peer-review › Article in proceedings – Annual report year: 1999

Linking DC together with TRSL
Publication: Research › Poster – Annual report year: 1999

Linking DC together with TRSL
Publication: Research › Article in proceedings – Annual report year: 1999
Subsorted Partial Higher-order Logic as an Extension of CASL
Publication: Research › Article in proceedings – Annual report year: 1999

A RAISE Specification Framework and Justification assistant for the Duration Calculus
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998

CASL The Common Algebraic Specification Language Semantics
Publication: Research - peer-review › Report – Annual report year: 1998

Extending CASL with Higher-order Functions: Design Proposal
Publication: Research - peer-review › Report – Annual report year: 1998

Formal Development and Verification of a Distributed Railway Control System
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998

Subsorted Partial Higher-order Logic as an Extension of CASL
Publication: Research - peer-review › Report – Annual report year: 1998

CASL - The CoFI Algebraic Specification Language (Tentative Design, version 0.95) -- Language Summary with annotations concerning questions and doubts
Publication: Research - peer-review › Report – Annual report year: 1997

CASL - The CoFI Algebraic Specification Language (Tentative Design, version 0.95) - Language Summary, with annotations concerning the semantics of constructs.
Publication: Research - peer-review › Report – Annual report year: 1997

CASL - The CoFI Algebraic Specification Language (version 0.97) - Semantics
Publication: Research - peer-review › Report – Annual report year: 1997

CASL- The Common Algebraic Specification Language- Summary
Publication: Research - peer-review › Report – Annual report year: 1997

LYCOS: The Lyngby Co-Synthesis System
Publication: Research - peer-review › Journal article – Annual report year: 1997

Order-sorted Algebraic Specifications with Higher-order
Publication: Research - peer-review › Journal article – Annual report year: 1997

Permissive Subsorted Partial Logic in CASL.
Publication: Research - peer-review › Article in proceedings – Annual report year: 1997

CASL - The COFI Algebraic Specification Language Tentative Design: Language Summary
Publication: Research - peer-review › Report – Annual report year: 1996

Constraints
Publication: Research - peer-review › Report – Annual report year: 1996

DC + RSL
Publication: Research - peer-review › Report – Annual report year: 1996
Projects:
Formal development and verification of railway control systems
Project: PhD

Modelling and analysis for Cyber-Physical Systems
Project: PhD

Pattern-oriented Formal Software Development
Project

Modelling og analyse af globale applikationer
Project: PhD

Proof support for raise
Project: PhD

Domain-specific Languages for Railway Control Systems
Project

Modelling Railway Interlocking Systems II
Project

CoFI WG (ESPRIT Working Group no. 29432)
Project

FMERail (ESPRIT Project EP26538)
Project

Information project for highschool pupils
Project

Co-synthesis of RSL Specifications
Project

Dracos
Project

Timed RAISE
Project

CoFI
Project

Module Composition Mechanisms
Project

Subtyping and Higher-order Functions
Project

Activities:
Formal Methods for Software Development
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

University of Florence
Activity: Visiting an external institution › Visiting another research institution

Green Light for Smarter Methods in Railway Safety Verification
Activity: Talks and presentations › Conference presentations

Formel Modellering og Verifikation af Jernbanekontrolsystemer: Et eksempel fra RobustRailS WP 4.1
Activity: Talks and presentations › Conference presentations

Assessment Committee for a post.doc. position (External organisation)
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Danish Railway Conference 2012
Activity: Attending an event › Participating in or organising a conference

Conference on European Rail Traffic Management System
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

An Introduction to Formal Methods for Software Development
Activity: Public and private sector consultancy › Public sector consultancy

A Model-based Tool Set for Simulation and Verification of Relay Interlocking Systems
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Towards a Semantics for VDM Core
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

MicroSoft Research Software Summit
Activity: Attending an event › Participating in or organising a conference

Effective Development and Verification of Railway Control Software
Activity: Talks and presentations › Conference presentations

Member of the review board for a VIP position at Engineering College of Århus (External organisation)
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Formal Methods: A Tutorial on Model-oriented Specification
Activity: Public and private sector consultancy › Public sector consultancy

An Introduction to Formal Methods for the Development of Safety-critical Applications
Activity: Public and private sector consultancy › Public sector consultancy

An Introduction to Formal Methods for Software Development
Activity: Public and private sector consultancy › Public sector consultancy

Talentudvikling og karriererådgivning
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
JAIST Advanced School on Formal Specification and Systems Verification 2010 (JAIST-FSSV2010)
Activity: Attending an event › Participating in or organising a conference

Member of the review board of a Ph.D. thesis entitled "Domain-specific Modelling of Railway Control Systems with Integrated Verification and Validation", by Kirsten Mewes, Bremen University (External organisation)
Activity: Examinations and supervision › External examination

Towards a Framework for Modelling and Verification of Relay Interlocking Systems
Activity: Talks and presentations › Conference presentations

A Domain-specific, Model-based Approach for Construction and Verification of Railway Control Systems
Activity: Talks and presentations › Conference presentations

Press clippings:

Returning to the Rails.: Rail Safety: Back in the Spotlight.
Press / Media

Ekspert om tysk togkollision: "Besynderlig ulykke"
Press / Media

Matematik mindsker risiko for togkollision
Press / Media

Matematisk gennembrud øger tog sikkerheden
Press / Media