



19th IEEE International

REQUIREMENTS ENGINEERING CONFERENCE

August 29th - September 2nd 2011 - Trento, Italy



CONFERENCE PROGRAM

19th IEEE International Requirements Engineering Conference

Fondazione Bruno Kessler
Center for Information Technology – IRST
Via Sommarive 18, Trento, Italy

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(photo archive Castello del Buonconsiglio, monumenti e collezioni provinciali, Trento)

Castel Ivano picture (pag. 29)

(photo archive Castel Ivano)

map of Trento taken from www.virgilio.it

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1. Conference Welcome

Welcome/Benvenuti to the 19th IEEE International Requirements Engineering Conference (RE'11)!

The host city, Trento, has a long history of serving as a meeting place for Northern, Southern, Western and Eastern European cultures. It also has a tradition of supporting high quality research through the host institutions, the University of Trento and the Fondazione Bruno Kessler (FBK).

We hope that you will find the technical programme interesting for your professional work. In addition, we encourage you to take some time to enjoy Trento and the surrounding Alpine scenery.



John Mylopoulos
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Patrick Heymans
Program Chair



Samuel Fricker
Industry Track



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2. Committees

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Utrecht University, The Netherlands

3. Pre-Conference Schedule

MONDAY, AUGUST 29 TH						
WORKSHOPS						
Room:	Aula Kessler	Aula 8	Aula 12	Aula 11	Aula 14	Aula 9
9.00 - 10.30	Doc Symp	W1 RePa'11	W2 MoDRE	W3 REET	W4 REVOTE	W5 RESC
10.30 - 11.00	Morning Tea Break					
11.00 - 12.30	Doc Symp	W1 RePa'11	W2 MoDRE	W3 REET	W4 REVOTE	W5 RESC
12.30 - 2.00	Lunch Break					
2.00 - 3.30	Doc Symp	W1 RePa'11	W2 MoDRE	W3 REET	W4 REVOTE	W5 RESC
3.30 - 4.00	Afternoon Tea Break					
4.00 - 5.30	Doc Symp	W1 RePa'11	W2 MoDRE	W3 REET	W4 REVOTE	W5 RESC

Doctoral Symposium

Chair: **Vicenzo Gervasi**, University of Pisa, Italy

Jane Cleland-Huang, DePaul University, USA

Achieving Non-Functional Requirements @ Runtime via Dynamic Software Product-Lines

Amir Molzam Sharifloo

A Novel Framework for Requirements Elicitation in a Military Setting

Fernando Muradas

Bridging the Gap Between Requirements Sketches and Semi-Formal Models

Dustin Wüest

Identifying Intentional Ambiguity in Requirements Specifications Using Markedness Analysis

Mehrnaz Natoori

Usage of advanced tagging to support requirements engineering in user-centered software developments

Hendrik Meth

Requirement Engineering for Embedded Systems Using Domain Ontologies

Stefan Farfeleder

Exploration and Validation through Animation of Scenario Specifications

Gregor Gabrysiak

W1 RePa'11 - Requirements Patterns

Lawrence Chung, The University of Texas at Dallas, USA
Neil Maiden, City University London, UK
Barbara Paech, University of Heidelberg, Germany
Sam Supakkul, The University of Texas at Dallas, USA

W2 MoDRE - Model-Driven Requirements Engineering

Gunter Mussbacher, Carleton University, Canada
Pablo Sanchez, Universidad de Cantabria, Spain
João Araújo, Universidade Nova de Lisboa, Portugal
Ana Moreira, Universidade Nova de Lisboa, Portugal

W3 REET - Requirements Engineering Education and Training

Joy Beatty, Seilevel, USA
Ljerka Beus-Dukic, University of Westminster, UK

W4 REVOTE - Requirements Engineering for E-Voting Systems

Rüdiger Grimm, University of Koblenz-Landau, Germany
Melanie Volkamer, Technische Universität Darmstadt, Germany
Komminist Weldemariam, Fondazione Bruno Kessler, Italy

W5 RESC - Requirements Engineering for Social Computing

Amit K. Chopra, University of Trento, Italy
Fabiano Dalpiaz, University of Trento, Italy
Soo Ling Lim, University College London, UK

MONDAY, AUGUST 29TH

TUTORIALS

Room:	Aula 6/7	Aula 10	Aula 15	Aula 20
9.00 - 10.30	FT1	FT2	HT1	B1
10.30 - 11.00	Morning Tea Break			
11.00 - 12.30	FT1	FT2	HT1	
12.30 - 2.00	Lunch Break			
2.00 - 3.30	FT1	FT2		B3
3.30 - 4.00	Afternoon Tea Break			
4.00 - 5.30	FT1	FT2		B4

- FT1** **User Stories and Requirements Engineering in Agile Projects**
 Walter Eich, Zühlke Engineering, Switzerland
 Markus Flückiger, Zühlke Engineering, Switzerland
- FT2** **The Physics of Notations: A Scientific Approach to Designing Visual Notations in Requirements Engineering**
 Daniel Moody, Ozemantics Pty Ltd, Australia
- HT1** **Practical Experimentation Principles for Requirement Engineering**
 Massimiliano Di Penta, University of Sannio, Italy
 Alessandro Marchetto, Fondazione Bruno Kessler, Italy
- B1** **Model-Driven Requirements Engineering in Practice**
 Oscar Pastor, Universitat Politècnica de València, Spain
 Sergio España, Universitat Politècnica de València, Spain
- B3** **Use of Quality Models in Requirements Engineering and their Application on OTS Components Selection**
 Juan Pablo Caravallo, Pacific University of Ecuador, Ecuador
 Xavier Franch, Universitat Politècnica de Catalunya, Spain
- B4** **Easy Approach to Requirements Syntax**
 Alistair Mavin, Rolls-Royce PLC, UK

TUESDAY, AUGUST 30TH

WORKSHOPS

Room:	Aula 6	Aula 8	Aula 12	Aula Kessler	Aula 11	Aula 14	Aula 9
9.00 - 10.30	W6 IWSPM'11	W7 RELAW'11	W8 @run.time	W9 EmpiRE	W10 RESA4	W11 MERE'11	W12 MaRK'11
10.30 - 11.00	Morning Tea Break						
11.00 - 12.30	W6 IWSPM'11	W7 RELAW'11	W8 @run.time	W9 EmpiRE	W10 RESA4	W11 MERE'11	W12 MaRK'11
12.30 - 2.00	Lunch Break						
2.00 - 3.30	W6 IWSPM'11	W7 RELAW'11	W8 @run.time	W9 EmpiRE	W10 RESA4	W11 MERE'11	W12 MaRK'11
3.30 - 4.00	Afternoon Tea Break						
4.00 - 5.30	W6 IWSPM'11	W7 RELAW'11	W8 @run.time	W9 EmpiRE	W10 RESA4	W11 MERE'11	W12 MaRK'11

W6 IWSPM'11 - Software Product Management

Marjo Kauppinen, Aalto University, Finland
Krzysztof Wnuk, Lund University, Sweden

W7 RELAW 2011 - Requirements Engineering and Law

Annie Antón, North Carolina State University, USA
David Baumer, North Carolina State University, USA
Travis Breaux, Carnegie Mellon University, USA
Dimitris Karagiannis, University of Vienna, Austria

W8 Requirements@run.time

Nelly Bencomo, INRIA, France, and Lancaster University, UK
Jon Whittle, Lancaster University, UK
Emmanuel Letier, University College London, UK
Anthony Finkelstein, University College London, UK

W9 EmpiRE1 - Empirical Requirements Engineering

Maya Daneva, University of Twente, The Netherlands
Vincenzo Gervasi, University of Pisa, Italy
Andrea Herrmann, Axivion, Germany
Alessandro Marchetto, Fondazione Bruno Kessler, Italy
Oscar Pastor, Universidad Politécnica de Valencia, Spain
Marco Torchiano, Politecnico di Torino, Italy

W10 RESA4 - Requirements Engineering for Systems, Services, and Systems of Systems

Luciano Baresi, Politecnico di Milano, Italy
Brian Berenbach, Siemens Corporate Research, USA
Jane Cleland-Huang, DePaul University, USA
Janice Hill, Florida Institute of Technology, USA
Neil Maiden, City University London, UK

W11 MERE'11 - Multimedia and Enjoyable Requirements Engineering

Oliver Creighton, Siemens, Germany
David Callele, TRILabs Saskatchewan, Canada
Olly Gotel, Independent Researcher, USA

W12 MaRK'11 - Managing Requirements Knowledge

Walid Maalej, Technical University of Munich, Germany
Anil Kumar Thurimella, Harman International, Germany

TUESDAY, AUGUST 30TH**TUTORIALS**

Room:	Aula 7	Aula 10	Aula 15	Aula 20
9.00 - 10.30	FT3	FT4	HT3	B5
10.30 - 11.00	Morning Tea Break			
11.00 - 12.30	FT3	FT4	HT3	B6
12.30 - 2.00	Lunch Break			
2.00 - 3.30	FT3	FT4	HT4	B7
3.30 - 4.00	Afternoon Tea Break			
4.00 - 5.30	FT3	FT4	HT4	B8

FT3 Lessons Learned from Doing Practical Requirements Engineering

Alan Davis, University of Colorado at Colorado Springs, USA

FT4 Building Multi-View System Models for Requirements Engineering

Axel van Lamsweerde, Université catholique de Louvain, Belgium

- HT3 Formal Validation of Requirements for Hybrid Systems**
Alessandro Cimatti, Fondazione Bruno Kessler, Italy
Marco Roveri, Fondazione Bruno Kessler, Italy
Angelo Susi, Fondazione Bruno Kessler, Italy
Stefano Tonetta, Fondazione Bruno Kessler, Italy
- HT4 Requirements meet interaction design**
Hermann Kaindl, Vienna University of Technology, Austria
- B5 The Art and Science of Diagramming: Communicating Effectively Using Diagrams**
Daniel Moody, Ozemantics Pty Ltd, Australia
- B6 The User Requirements Notation (URN) for Business Process Modeling and Legal Compliance**
Gunter Mussbacher, Carleton University, Canada
Sepideh Ghanavati, University of Ottawa, Canada
Alireza Pourshahid, University of Ottawa, Canada
Azalia Shamsaei, University of Ottawa, Canada
- B7 Requirements Modeling with SysML: Breakthrough or Buzz?**
Pascal Roques, PRFC, France
- B8 Product Line Requirements Reuse based on Variability Management**
Mike Mannion, Glasgow Caledonian University, Scotland, UK
Hermann Kaindl, Vienna University of Technology, Austria

4. Conference Schedule

WEDNESDAY, AUGUST 31 ST			
9.00 - 10.30	Plenary session Room: Plenary		
10.30 - 11.00	Morning Tea Break		
11.00 - 12.30	Research Session 1 Room: Aula 1	Research Session 2 Room: Aula 3	Industry Session 1 Room: Aula Kessler
12.30 - 2.00	Lunch Break		
2.00 - 3.30	Mini Tutorial Room: Aula 1	Meet the Expert Room: Aula Kessler	
3.30 - 4.00	Afternoon Tea Break		
4.00 - 5.30	Research Session 3 Room: Aula 1	Technology Transfer Session Room: Aula 3	Short Paper Industry Session Room: Aula Kessler

PLENARY SESSION

Room: Plenary

9.00 Conference Welcome

John Mylopoulos, University of Trento, Italy

Patrick Heymans, University of Namur, FUNDP, Belgium

Samuel Fricker, Blekinge Institute of Technology, Sweden

Anna Perini, Fondazione Bruno Kessler - IRST, Italy

Angelo Susi, Fondazione Bruno Kessler - IRST, Italy

9.30 Keynote Address

Chair: **Patrick Heymans**, University of Namur, FUNDP, Belgium

In a Ubiquitous World Requirements are Ubiquitous Too

Cecilia Mascolo, University of Cambridge, UK

Abstract

The soaring presence of devices that can sense the environment, human activity and social interactions in a ubiquitous fashion, opens the doors to potentially very effective multi-disciplinary research. Battery-powered tiny sensors can be distributed across an area to monitor conditions with very fine granularity. Moreover, mobile phones are powerful sensors that we voluntarily carry throughout our daily life.

However, as well as introducing exciting opportunities, these technologies

offer many challenges: writing software for these systems is all but obvious due to power, communication and computational constraints as well as to their context dynamicity. In addition, the interactions with the software users (i.e., the non computer scientists "scientists" collaborating in the projects) impose requirements that change the way in which software is conceived, tested and deployed. In this talk I will describe my experience and the lessons learned in two multi-disciplinary projects: collaboration with zoologists for animal monitoring through sensing and with social psychologists for monitoring human interactions through mobile phones. The talk will discuss the ubiquity of requirements when mobile and sensing start being employed.

RESEARCH SESSION 1

Room: Aula 1

11.00 Requirements in Motion 1/2

Chair: **Xavier Franch**, Universitat Politècnica de Catalunya, Spain

Evolving Specifications Formally

Prahladavaradan Sampath, Silky Arora, Ramesh S.

Finding Incremental Solutions for Evolving Requirements

Neil A. Ernst, Alexander Borgida, Ivan Jureta

Software Requirements Change Ontology: A Case Study

Sharon McGee, Des Greer

RESEARCH SESSION 2

Room: Aula 3

11.00 Empirical Studies

Chair: **Paul Gruenbacher**, Johannes Kepler Universität, Austria

Requirements Are Slipping Through the Gaps - A Case Study on Causes & Effects of Communication Gaps in Large-Scale Software Development

Elizabeth Bjarnason, Krzysztof Wnuk, Björn Regnell

How Interaction between Roles Shapes the Communication Structure in Requirements-Driven Collaboration

Sabrina Marczak, Daniela Damian

Integrating the Analysis of Customers' Processes into Roadmapping : The Value-Creation Perspective

Marko Komssi, Marjo Kauppinen, Harri Töhönen, Laura Lehtola, Alan M. Davis

INDUSTRY SESSION 1

Room: Aula Kessler

11.00 Requirements Engineering for Complex Systems

Chair: **Tony Gorschek**, Blekinge Institute of Technology, Sweden

Challenges of Requirements Engineering – A Case Study in the Nuclear Energy Domain

Mikko Raatikainen, Tomi Männistö, Teemu Tommila, Janne Valkonen

Managing Requirements Uncertainty in Engine Control Systems Development

Andy J. Nolan, Silvia Abrahão, Paul Clements, Andy Pickard

Disambiguation of Industrial Standards through Formalization and Graphical Languages

Daniel Dietsch, Sergio Feo Arenis, Bernd Westphal, Andreas Podelski

MINI TUTORIAL

Room: Aula 1

2.00 Emotional Requirements Engineering

Alistar Sutcliffe, University of Manchester, UK

Chair: **Neil Maiden**, City University London, UK

MEET THE EXPERT

Room: Aula Kessler

2.00 Collaborative Requirements Definition and Management

Gisele Consoline, IBM Rational, Slovakia

Chair: **Walid Maalej**, Technische Universität München, Germany

RESEARCH SESSION 3

Room: Aula 1

4.00 Prioritization and Optimization

Chair: **Yijun Yu**, The Open University, UK

Prioritization of Quality Requirements: State of Practice in Eleven Companies

Richard Berntsson Svensson, Tony Gorschek, Björn Regnell, Richard Torkar, Ali Shahrokni, Robert Feldt, Aybüke Aurum

Simulating and Optimising Design Decisions in Quantitative Goal Model

William Heaven, Emmanuel Letier

Understanding Clusters of Optimal Solutions in Multi-Objective Decision Problems

Varsha Veerappa, Emmanuel Letier

TECHNOLOGY TRANSFER SESSION

Room: Aula 3

4.00 Ready, Set, Transfer!

Jane Cleland-Huang, DePaul University, USA

Daniela Damian, University of Victoria, Canada

SHORT PAPER INDUSTRY SESSION

Room: Aula Kessler

4.00 RE from the Trenches

Chair: **Joerg Doerr**, Fraunhofer IESE, Germany

The Mythical Adequate Level of Details

Daniel Lucas-Hirtz, Mahvish Khurum

The Impact of a Requirements Specification on Software Defects and Other Quality Indicators

John Terzakis

Easy EARS: Rapid Application of the Easy Approach to Requirements Syntax

Sarah Gregory

Adoption of SysML by a Railway Signaling Manufacturer

Alessio Ferrari, Alessandro Fantechi, Stefania Gnesi, Gianluca Magnani, Alessandro Felleca

Requirements Engineering and Stakeholder Management in the Development of a Consumer Product for a Large Industrial Customer

Jens Bæk Jørgensen, Kim Nørskov, Niels Mark Rubin

THURSDAY, SEPTEMBER 1 st			
9.00 - 10.30	Plenary session Room: Plenary		
10.30 - 11.00	Morning Tea Break		
11.00 - 12.30	Research Session 4 Room: Aula 1	Panel Session Room: Aula 3	Industry Session 2 Room: Aula Kessler
12.30 - 2.00	Lunch Break		
2.00 - 3.30	Research Session 5 Room: Aula 1	Mini tutorial Room: Aula 3	Industry Session 3 Room: Aula Kessler
3.30 - 4.00	Afternoon Tea Break		
4.00 - 5.30	Research Session 6 Room: Aula 1	Poster and Demo Session Room: Aula 3/Demo Area	Industry Hands-on Room: Aula Kessler

PLENARY SESSION

Room: Plenary

9.00 Best Paper and 10 Year Most Influential Paper Awards

9.30 Keynote Address

Chair: **Marco Roveri**, Fondazione Bruno Kessler, Italy

Proving the Shalls in Practice

Michael Whalen, University of Minnesota, USA

Abstract

Recent advances in symbolic verification tools make it possible to rigorously analyze, and in many cases prove, whether software meets its requirements. These tools have the potential to revolutionize software verification and validation – but only if we have good requirements. Without a reasonably complete set of high-quality requirements, the benefits offered by techniques such as automated test case generation, symbolic evaluation, and proof tools is marginal.

RESEARCH SESSION 4

Room: Aula 1

11.00 Traceability and DocumentationChair: **Jane Cleland-Huang**, DePaul University, USA

Logical Structure Extraction from Software Requirements Documents

Rehan Rauf, Michał Antkiewicz, Krzysztof Czarnecki

On Human Analyst Performance in Assisted Requirements Tracing: Statistical Analysis

Alex Dekhtyar, Olga Dekhtyar, Jeff Holden, Jane Huffman Hayes, David Cuddeback, Wei-Keat Kong

Out of the Labyrinth: Leveraging Other Disciplines for Requirements Traceability

*Orlena C. Z. Gotel, Stephen J. Morris***PANEL SESSION**

Room: Aula 3

11.00 Tacit knowledge in Requirements Engineering**Vincenzo Gervasi**, University of Pisa, Italy**Pete Sawyer**, Lancaster University, UK**Bashar Nuseibeh**, The Open University, UK**INDUSTRY SESSION 2**

Room: Aula Kessler

11.00 Requirements and ArchitectureChair: **Rainer Grau**, Zühlke Technology Group, Switzerland

Reconciling Requirements and Architectures with the CBSP Approach in an iPhone App Project

Harald Vogl, Klaus Lehner, Paul Grünbacher, Alexander Egyed

A Means of Establishing Traceability Based on a UML Model in Business Application Development

Kyoko Ohashi, Hidetoshi Kurihara, Yuka Tananaka, Rieko Yamamoto

Requirements Negotiation for Multilayer System Components

Juan Pablo Carvallo, Xavier Franch

RESEARCH SESSION 5

Room: Aula 1

2.00 Modelling and Analysis

Chair: **Ivan Jureta**, University of Namur, FUNDP, Belgium

On the joint use of i* with other Modelling Frameworks: a Vision Paper
Xavier Franch, Alejandro Maté, Juan C. Trujillo, Carlos Cares

A Context Analysis Method for Embedded Systems --Exploring a Requirement Boundary between a System and Its Context
Naoyasu Ubayashi, Yasutaka Kamei, Masayuki Hirayama, Tetsuo Tamai

Vacuous Real-time Requirements

Amalinda Post, Jochen Hoenicke, Andreas Podelski

MINI TUTORIAL

Room: Aula 3

2.00 Large-Scale Feature Evolution – Problems and Solutions from the Mobile Domain

Bjorn Regnell, Lund University, Sweden

Chair: **Martin Glinz**, University of Zurich, Switzerland

INDUSTRY SESSION 3 AND PANEL

Room: Aula Kessler

2.00 Our Profession

Chair: **Lin Liu**, Tsinghua University, China

What are the Day-to-Day Factors that are Preventing Business Analysts from Effective Business Analysis?

Anja Wever, Neil Maiden

How Can Education Support the Development of Our Profession?

Tony Gorschek, Rainer Grau, Werner Henschelchen, Magnus Billgren, Anja Wever

RESEARCH SESSION 6

Room: Aula 1

4.00 Requirements in Motion 2/2

Chair: **Norbert Seyff**, University of Zurich, Switzerland

Focusing Spontaneous Feedback to Support System Evolution

Kurt Schneider

Structured and Unobtrusive Observation of Anonymous Users and their Context for Requirements Elicitation

Olesia Brill, Eric Knauss

POSTER AND DEMO SESSION

Room: Aula 3 / Demo Area

4.00 Chairs: **Paolo Giorgini**, University of Trento, Italy

Seok Won Lee, University of Nebraska-Lincoln, USA

List of Poster and Demo, page 24

INDUSTRY HANDS-ON

Room: Aula Kessler

4.00 Worldwide Standardization of Requirements Engineering Education

Rainer Grau, Zühlke Engineering AG, Switzerland

Stefan Sturm, IREB GmbH, Germany

Chair: **Carlo Daffara**, Conecta Research Ltd., Italy

FRIDAY, SEPTEMBER 2 ND			
9.00 - 10.30	Research Session 7 Room: Aula 1	Poster and Demo Session Room: Aula 3 / Demo Area	Industry Session 4 Room: Aula Kessler
10.30 - 11.00	Morning Tea Break		
11.00 - 12.30	Research Session 8 Room: Aula 1	Panel Session Room: Aula 3	Meet the Expert Room: Aula Kessler
12.30 - 2.00	Lunch Break		
2.00 - 3.30	Plenary Session Room: Plenary		

RESEARCH SESSION 7

Room: Aula 1

9.00 Law and Politics

Chair: **Daniel Amyot**, University of Ottawa, Canada

Power and Politics in Requirements Engineering: A Proposed Research Agenda
Alastair Milne, Neil Maiden

A Legal Cross-References Taxonomy for Identifying Conflicting Software Requirements

Jeremy C. Maxwell, Annie I. Antón, Peter Swire

Assessing the Accuracy of Legal Implementation Readiness Decisions

Aaron K. Massey, Ben Smith, Paul N. Otto, Annie I. Antón

POSTER AND DEMO SESSION

Room: Aula 3 / Demo Area

- 9.00 Chairs: **Paolo Giorgini**, University of Trento, Italy
Seok Won Lee, University of Nebraska–Lincoln, USA

List of Poster and Demo, page 24

INDUSTRY SESSION 4

Room: Aula Kessler

9.00 RE EfficiencyChair: **Inge van de Weerd**, Utrecht University, The Netherlands

There's Never Enough Time - Doing Requirements Under Resource Constraints, and What Requirements Engineering can Learn from Agile Development

Bernd Waldmann

How to Assign Cost to "Avoidable Requirements Creep" - A Step Towards the Waterfall's Agilization

Stefan Pühl, Ralf Fahney

Semi-Automatic Identification of Features in Requirement Specifications

*Ekaterina Boutkova, Frank Houdek***RESEARCH SESSION 8**

Room: Aula 1

11.00 Failure and Risk ManagementChair: **Mike Whalen**, University of Minnesota, USA

Are Your Sites Down? Requirements-Driven Self-Tuning for the Survivability of Web Systems

Bihuan Chen, Xin Peng, Yijun Yu, Wenyun Zhao

Early Failure Prediction in Feature Request Management Systems

Camilo Fitzgerald, Emmanuel Letier, Anthony Finkelstein

Risk and Argument: A Risk-based Argumentation Method for Practical Security

*Virginia N. L. Franqueira, Thein Than Tun, Yijun Yu, Roel Wieringa, Bashar Nuseibeh***PANEL SESSION**

Room: Aula 3

11.00 Design Requirements: Challenges and ApproachesChair: **Matthias Jarke**, RWTH Aachen University, Germany**MEET THE EXPERT**

Room: Aula Kessler

11.00 Scrum, but...? Scrum, and...! Using Scrum and Requirements Engineering SuccessfullyChair: **Susanne Muehlbauer**, HOOD GroupChair: **Oliver Creighton**, Technische Universität München, Germany

PLENARY SESSION

Room: Plenary

RE 2011

Conference Schedule - Friday

2.00 Keynote Address

Chair: **Bashar Nuseibeh**, The Open University, UK

Feature-Oriented Requirements: the Good, the Bad, and the Ugly

Joanne Atlee, University of Waterloo, Canada

Abstract

A software system is often thought of in terms of its constituent features. In requirements engineering, features can serve as a shared vocabulary among stakeholders of varying backgrounds (e.g., users, developers, marketers). In design, they can form the basis of system decomposition, in which feature modules are treated as separate components that are developed in relative isolation or are supplied by third-party vendors.

The challenge of feature modularity is in managing feature interactions. Seemingly independent features may interact with each other in subtle and surprising ways. For example, a new feature may override existing behaviour, violate invariant properties, or refine the definitions of terms. Determining how interacting features ought to behave is a requirements-engineering problem. However, the scale of the feature interaction problem is non-linear in the number of features – to the point where identifying and resolving interactions dominate the feature-development process.

This presentation will give an overview of the research on feature modularity and interactions from the perspective of the feature-interaction community. It will look at general strategies for detecting and resolving classes of interactions. It will also look at some of the wicked open problems.

3.00 Conference Closing

John Mylopoulos, University of Trento, Italy

Patrick Heymans, University of Namur, FUNDP, Belgium

Samuel Fricker, Blekinge Institute of Technology, Sweden

Anna Perini, Fondazione Bruno Kessler - IRST, Italy

Angelo Susi, Fondazione Bruno Kessler - IRST, Italy

5. Poster and Demo

TraCter: A Tool for Candidate Traceability Link Clustering

Anas Mahmoud, Nan Niu, Mississippi State University, USA

rZ: Automated Reasoning Tool for Non-Functional Requirement Goal Models

Bo Wei, Bin Yin, Chinese Academy of Sciences, China

Zhi Jin, Peking University, China

Eliciting Usable Security Requirements with Misusability Cases

Shamal Faily, Ivan Fléchaïs, University of Oxford, UK

PABRE-Man: Management of a Requirement Patterns Catalogue

Cristina Palomares, Carme Quer, Xavier Franch, Universitat Politècnica de Catalunya, Spain

Modelling Adaptability and Variability in Requirements

Phil Greenwood, Ruzanna Chitchyan, Awais Rashid, Lancaster University, UK

Joost Noppen, University of East Anglia, UK

Franck Fleurey, Arnor Solberg, SINTEF, Norway

Experience with Content-Based Requirements Engineering Assessments

Sabine Teuffl, Maged Khalil, Dongyue Mou and Eva Geisberger, Fortiss GmbH, Germany

iRequire: Gathering End-User Requirements for New Apps

Norbert Seyff, Gregor Ollmann, University of Zurich, Switzerland

Manfred Bortenschlager, Samsung Electronics, UK

UML4PF – A Tool for Problem-Oriented Requirements Analysis

Isabelle Côté, Maritta Heisel, and Holger Schmidt, University Duisburg-Essen, Germany

Denis Hatebur, ITESYS GmbH, Germany

OpenArgue: Supporting Argumentation to Evolve Secure Software Systems

Yijun Yu, Thein Than Tun, Open University, UK

Alessandra Tedeschi, DeepBlue, Italy

Virginia N. L. Franqueira, University of Twente, The Netherlands

Bashar Nuseibeh, Open University, UK & Lero, Ireland

Applying Preference-based Customization

Sotirios Liaskos, York University, UK

Vyacheslav Rogozhkin, University of Potsdam, Germany

Run-time Resolution of Uncertainty

Kristopher Welsh, Pete Sawyer, Lancaster University, UK

Nelly Bencomo, INRIA Paris – Rocquencourt, France

6. Keynote Speakers



Cecilia Mascolo
University of Cambridge, UK
In a Ubiquitous World Requirements are Ubiquitous Too
Wednesday, August 31st

BIOGRAPHY

Dr. Cecilia Mascolo is a Reader in Mobile Systems in the Computer Laboratory, University of Cambridge, UK. Prior to this, she was with the Department of Computer Science of University College London, UK. She holds an MSc and PhD in Computer Science from University of Bologna (Italy).

Cecilia's research concentrates on mobility data gathering, analysis, modeling and exploitation through research council and industry funded projects. Most of the projects are multi-disciplinary. Her research strategy is heavily experimental and deployment oriented.

She has published extensively in the areas of mobile sensor networks, mobile network routing, realistic mobility models and social network analysis. Cecilia has served in the Organization Committees of many mobile and sensor systems, middleware, software engineering and data mining conferences and workshops. She is on the editorial board of IEEE Internet Computing.

More details of her profile are available at www.cl.cam.ac.uk/~cm542.



Michael Whalen
University of Minnesota, USA
Proving the Shalls in Practice
Thursday, September 1st

BIOGRAPHY

Dr. Michael Whalen is the Program Director at the University of Minnesota Software Engineering Center.

Dr. Whalen is interested in formal analysis, compilers, testing, and requirements engineering. He has developed simulation, translation, testing, and formal analysis tools for Model-Based Development languages including Simulink, Stateflow, SCADE, and RSML-e, and has published more than 30 papers on these topics.

He has led successful formal verification projects on large industrial avionics models, including displays (Rockwell-Collins ADGS-2100 Window Manager), redundancy management and control allocation (AFRL CerTA FCS program) and autoland (AFRL CerTA CPD program).

His PhD dissertation involved using higher-order abstract syntax as a basis for a provably-correct code generation tool from the RSML-e specification language into a subset of C.



Joanne Atlee
University of Waterloo, Canada

Feature-Oriented Requirements: the Good, the Bad, and the Ugly
Friday, September 2nd

BIOGRAPHY

Joanne Atlee is an Associate Professor in the David R. Cheriton School of Computer Science at the University of Waterloo.

Her research interests include software modelling, automated analysis of software models, modular software development, feature interactions, and software-engineering education. She spent 10 years investigating the feature interaction problem in the telephony domain, working with companies such as Nortel Networks, AT&T Labs, and Mitel Networks. More recently, she has started to explore the modelling, analysis, and coordination of automotive features.

She was Program Co-Chair for the 31st International Conference on Software Engineering (ICSE'09) and was Program Chair for the 13th IEEE Requirements Engineering Conference (RE'05).

She serves on the ACM SIGSOFT Executive Committee as an at-large member and is a member of the International Federation for Information Processing (IFIP) Working Group 2.9 on Software Requirements Engineering.

She is a co-author with Shari Lawrence Pfleeger on their textbook "Software Engineering: Theory and Practice".

7. Social Events

CONFERENCE RECEPTION

Castello del Buonconsiglio

6.00 - 8.00 pm

Tuesday, August 30th

The Buonconsiglio Castle is a museum as well as the largest monumental complex in Trentino-Alto Adige. The Castle built up against the 13th century city walls, served as the residence of the Bishops of Trento from the second half of the 13th century until the secularization of the principality in 1803.

It is composed of a series of buildings of different eras, enclosed by walls and positioned slightly higher than the city.

Today it is the seat of the Museo Provinciale d'Arte (Provincial Art Museum), monuments and provincial art collections. It holds numerous collections of art, paintings, sculptures, graphic works, miniate codes, majolica ovens, as well as archaeological and numismatic collections. Among its many Baroque and Gothic frescoes, an outstanding work is the Ciclo dei Mesi (Cycle of the Months) considered one of the most significant examples of international Gothic style in the world.

The Castle is located in the very center of Trento at a walking distance (10 minutes) from the Conference venue (See Map)

Castello del Buonconsiglio
Via Bernardo Clesio, 5
Trento - Italia
www.buonconsiglio.it



CONFERENCE BANQUET

Castel Ivano

7.00- 11.00 pm

Thursday, September 1st

Castel Ivano is a fascinating monument and a prestigious cultural centre. The monumental Medieval complex overlooking the town of Ivano Fracena, and Eastern Valsugana, is surrounded by a large park and a wildlife sanctuary. The original Longobard core of the building dates back to 590 AD, although it is first mentioned in a written document in 1187.

The castle boasts an uncommon feature in the region: a perfectly preserved battlement walk, along the typically Medieval walls surrounding the Renaissance residence and the 'Benedictine' lodge. The watchtower, whose walls still bear the coats of arms of the castle's historic owners, leads to the moat and the large doorway, and then to the courtyard outdoor, with its fountain and an historic acacia tree planted in the 16th century, the old hay barn and the 17th century chapel.

The Castle is located in Ivano Fracena, a small village at 40 minutes of distance from the Conference venue.

There will be buses from and to Trento. They depart from Piazza Dante, which is 10 minutes walking distance from the conference venue (see map).

SCHEDULE

- 7.00 pm** buses pick up delegates from Piazza Dante - Trento to Castel Ivano
11.00 pm buses pick up delegates from Castel Ivano to Piazza Dante



Castel Ivano
38059 - Ivano Fracena
Trento - Italia
www.castelivano.it

8. Map of Trento

Map of Trento



Legend:

- Conference venue: Sociology Faculty, via Verdi, 26 I-38122 Trento
- Railway station
- 1 Conference reception: **Castello Buonconsiglio**
(via Bernardo Clesio, 5 I-38122 Trento)
- 2 Bus departure for Conference banquet: **Piazza Dante**



The 20th IEEE

Requirements Engineering Conference

September 24th-28th, 2012
Gleacher Center, **Chicago**, USA

Important Dates:

Workshop Proposals

01/30/12

Tech, Industrial Paper Abstracts

02/27/12

Full Paper Submission

03/05/12

Tutorial, Panel, Symposium

Submissions

05/28/12

re12.org

General Chair:

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Program Chair:

Pete Sawyer,

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[HTTP://WWW.RE11.ORG](http://www.re11.org)