4th International Workshop on Principles for Engineering Service-Oriented Systems

Organizers
Patricia Lago (VU University Amsterdam, Netherlands)
Grace A. Lewis (CMU Software Engineering Institute, USA)
Andreas Metzger (PALUNO, University of Duisburg-Essen, Germany)
Vladimir Tosic (NICTA, Australia)

ICSE 2012
Zurich, Switzerland
June 4, 2012
Grace A. Lewis
CMU Software Engineering Institute, USA

Welcome
Motivation

- Service-oriented systems pose novel challenges for software engineering
  - Lack of homogeneity of basic components
  - Requirement to accommodate unprecedented levels of changes and dynamic evolution
- Increasingly, services will be offered via the Internet through emerging delivery models
- Future software systems will increasingly rely on the provisioning of services, which are no longer under the software engineer’s control
PESOS 2012 Workshop Goals

- Bring together software engineering researchers from academia and industry, as well as practitioners working in the areas of service-oriented systems to discuss
  - Research challenges
  - Recent developments
  - Novel application scenarios
  - Methods, techniques, experiences and tools to support engineering, evolution and adaptation of large-scale, highly-dynamic service-oriented systems
- For the first time, PESOS will feature a special session on “The Quest for Case Studies”
Workshop Logistics

- One keynote
- Two paper sessions and one case study session
  - Introduction
  - Papers or case studies
  - Lots of discussion
- We expect highly interactive sessions
- We will be taking notes throughout the workshop and present a summary at the end of the day during the closing remarks
Principles of Engineering Service-Oriented Systems (from PESOS 2011)

- Think globally
  - Bound instead of control behavior — runtime simulation, monitoring and adaptation
  - Plan for diversity
- Increase flexibility
- Reduce complexity
- Enable agility/compositionality — metadata is key
- Reduce risk via pilot projects that weigh benefit against risk
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<td>• Simulating Awareness in Global Software Engineering: A Comparative Analysis of Scrum and Agile Service Networks</td>
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<td>• Non-Functional Analysis of Service Choreographies</td>
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## Agenda 2

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<td>• Providing Lightweight and Adaptable Service Technology for Information and Communication (PLASTIC) in the Mobile eHealth Case Study</td>
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| 16:00 – 17:15| Session 4 — Governance and Monitoring of Service-Oriented Systems  
• SALMonADA: A Platform for Monitoring and Explaining Violations of WS-Agreement-Compliant Documents  
• PRadapt: A Framework for Dynamic Monitoring of Adaptable Service-Based Systems  
• Exploring the Impact of Inaccuracy and Imprecision of QoS Assumptions on Proactive Constraint-Based QoS Prediction for Service Orchestrations  
• Managing Multiple Applications in a Service Platform |
| 17:15 – 17:30| Closing Remarks                                                                                                                                     |
Informal Dinner

- Zeughauskeller Restaurant
  Bahnhofstrasse 28a near Paradeplatz
  8001 Zürich
  http://www.trymarket.ch/zeughauskeller/english/frame_start.htm

- Reservation at 7PM under the name Carl Worms

- If you wish to join us, please mark on the sign-in sheet that you are interested in attending

- NOTE: Dinner is not included in the workshop fees. We will ask for separate checks so you have a receipt.
Introductions

Briefly state your name, organization, and areas of interest related to service orientation
Carl Worms
Enterprise Architect
Credit Suisse AG, IT Private Banking, Switzerland

Session 1
Keynote: An Internet of Services - Visions
Carl Worms

- Enterprise architect in Credit Suisse Private Banking IT with focus on strategy and architecture of software engineering processes
- Received the Walter Masing Award of the German Society for Quality in 1993
- Joined Credit Suisse IT architecture in 1999 as leading methodologist
- Led the first software process improvement program from 2002-2005 and in 2007 the Quality Management organization
- Since 2008, as process architect for IT private banking, he has developed the roadmap for the next 10 years for application development processes, methods and tools
Facilitator: Patricia Lago
VU University Amsterdam, The Netherlands

Session 2: Agility and Quality in Service-Oriented Systems
Agility and Quality in Service-Oriented Systems

- Globalization, virtualization, and speed characterize organizations and their supporting systems, as well as the way they do business.
- Agility is a must — quality compromises are infeasible.
  - To dynamically adapt to emerging customer demands and partnerships.
  - To (automatically) manage ecosystems-as-a-service.
    - including detecting inconsistencies, composing services.
  - To support sound decision making guaranteeing a target QoS.
Papers

- Dependability-Driven Runtime Management of Service Oriented Architectures
  
  Hanen Haouas (INRIA and University of Rennes, France) and Johann Bourcier (INRIA, France)

- Simulating Awareness in Global Software Engineering: A Comparative Analysis of Scrum and Agile Service Networks
  
  Damian A. Tamburri and Ivan S. Razo-Zapata (VU University Amsterdam, Netherlands), and Héctor Fernández and Cedric Tedeschi (INRIA Rennes, France)

- Non-Functional Analysis of Service Choreographies
  
  Cesare Bartolini, Antonia Bertolino and Guglielmo De Angelis (ISTI-CNR, Italy), and Andrea Ciancone and Raffaela Mirandola (Politecnico di Milano, Italy)

- Local Model Learning for Asynchronous Services
  
  Casandra Holotescu (Politehnica University of Timisoara, Romania)
Domenico Bianculli, Antinisca Di Marco, Pierluigi Plebani, and Andrea Polini

Session 3: The Quest for Case Studies
The Quest for Case Studies

- **Motivation**
  - Research ideas should be validated experimentally
  - Case studies of service-oriented systems are limited and costly to develop
  - Validation tends to be “weak”

- **Goals**
  - To create the reference set of case studies for the research community in service-oriented systems
    - hosted on a publicly available repository [http://scube-casestudies.ws.dei.polimi.it/index.php/Main_Page](http://scube-casestudies.ws.dei.polimi.it/index.php/Main_Page)
  - To share experiences and lessons learned
Case Studies

- Spicy Stonehenge: Proposing a SOA Case Study
  Tiago Espinha, Cuiting Chen, Andy Zaidman, and Hans-Gerhard Gross (TU Delft, Netherlands)

- Open SOALab: Case Study Artifacts for SOA Research and Education
  Norman Wilde, John Coffey; Thomas Reichherzer; Laura White (University of West Florida, USA)

- Constraint-Based Invocation of Stateful Web Services: The Beep Store
  Sylvain Hallé (Université du Québec à Chicoutimi, Canada) and Roger Villemaire (UQAM, Canada)

- Cloud in a Cloud for Cloud
  Shigetoshi Yokoyama and Nobukazu Yoshioka (National Institute of Informatics, Japan), and Takahiro Shida (NTT DATA Intellilink, Japan)

- A Car Logistics Scenario for Context-Aware Adaptive Service-Based Systems
  Antonio Bucchiarone, Nawaz Khurshid, Annapaola Marconi, and Heorhi Raik (FBK-IRST, Italy), and Marco Pistore (ITC-IRST Trento, Italy)

- A Monitoring Data Set for Evaluating QoS-Aware Service-Based Systems
  Philipp Leitner, Waldemar Hummer, and Schahram Dustdar (Vienna University of Technology, Austria)

- Providing Lightweight and Adaptable Service Technology for Information and Communication (PLASTIC) in the Mobile eHealth Case Study
  Marco Autili, Luca Berardinelli, Davide Di Ruscio, and Catia Trubiani (University of L’Aquila, Italy)
Andreas Metzger
Paluno (Ruhr Institute for Software Technology),
University of Duisburg-Essen, Germany

Session 4: Governance and Monitoring of Service-Oriented Systems
Governance and Monitoring of Service-Oriented Systems

- Dynamic changes due to
  - 3rd party services (Web services, Cloud, etc.), multitude of service providers, change in end-user devices, network connectivity, …

- Difference from traditional software systems
  - Unprecedented level of change
  - No guarantee that 3\textsuperscript{rd} party service fulfils its expectations / contract (SLA)
  - No visibility / control over 3\textsuperscript{rd} party services

→ Need for specific run-time observation and management techniques
Papers

- SALMonADA: A Platform for Monitoring and Explaining Violations of WS-Agreement-Compliant Documents
  
  Carlos Müller, Manuel Resinas and Antonio Ruiz-Cortés (Universidad de Sevilla, Spain), and Marc Oriol, Marc Rodríguez, Xavier Franch and Jordi Marco (Universitat Politècnica de Catalunya, Spain)

- PRadapt: A Framework for Dynamic Monitoring of Adaptable Service-Based Systems
  
  Ricardo Contreras and Andrea Zisman (City University, UK), and Annapaola Marconi and Marco Pistore (Fondazione Bruno Kessler, Italy)

- Exploring the Impact of Inaccuracy and Imprecision of QoS Assumptions on Proactive Constraint-Based QoS Prediction for Service Orchestrations
  
  Dragan Ivanovic (Technical University of Madrid (UPM), Spain), and Manuel Carro and Manuel Hermenegildo (Technical University of Madrid (UPM) and IMDEA Software Institute, Spain)

- Managing Multiple Applications in a Service Platform
  
  Jacky Estublier (Université Joseph Fourier, France) and German Vega (Laboratoire Informatique de Grenoble, France)