PESOS 2012

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)
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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
  - Summary will be made available on the PESOS 2012 web site: http://www.s-cube-network.eu/pesos-2012

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

Agenda 1

09:00 – 09:15	Welcome and Introductions
09:15 – 10:30	Session 1 — Keynote: An Internet of Services - Visions *Carl Worms (Credit Suisse AG, Switzerland)*
10:30 – 11:00	Coffee Break
11:00 – 12:30	Session 2 — Agility and Quality in Service-Oriented Systems • Dependability-Driven Runtime Management of Service Oriented Architectures • Simulating Awareness in Global Software Engineering: A Comparative Analysis of Scrum and Agile Service Networks • Non-Functional Analysis of Service Choreographies • Local Model Learning for Asynchronous Services
12:30 – 14:00	Lunch

Agenda 2

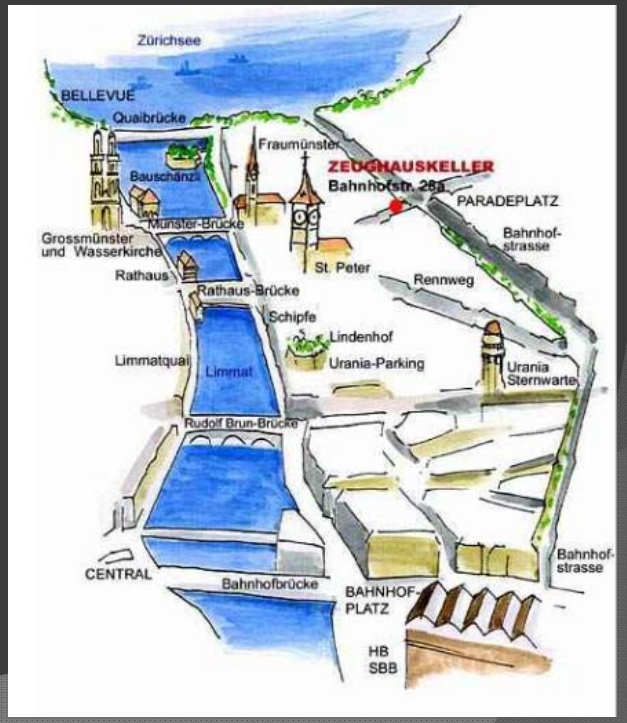
14:00 – 15:30	Session 3 — The Quest for Case Studies • Spicy Stonehenge: Proposing a SOA Case Study • Open SOALab: Case Study Artifacts for SOA Research and Education • Constraint-Based Invocation of Stateful Web Services: The Beep Store • Cloud in a Cloud for Cloud • A Car Logistics Scenario for Context-Aware Adaptive Service-Based Systems • A Monitoring Data Set for Evaluating QoS-Aware Service-Based Systems • Providing Lightweight and Adaptable Service Technology for Information and Communication (PLASTIC) in the Mobile eHealth Case Study
15:30 – 16:00	Coffee Break

Agenda 3

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
Enterpise 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
  - 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 3rd party service fulfils its expectations / contract (SLA)
  - No visibility / control over 3rd 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 (Universit Joseph Fourier, France) and German Vega (Laboratoire Informatique de Grenoble, France)