MODULARITY
aosd • 2012

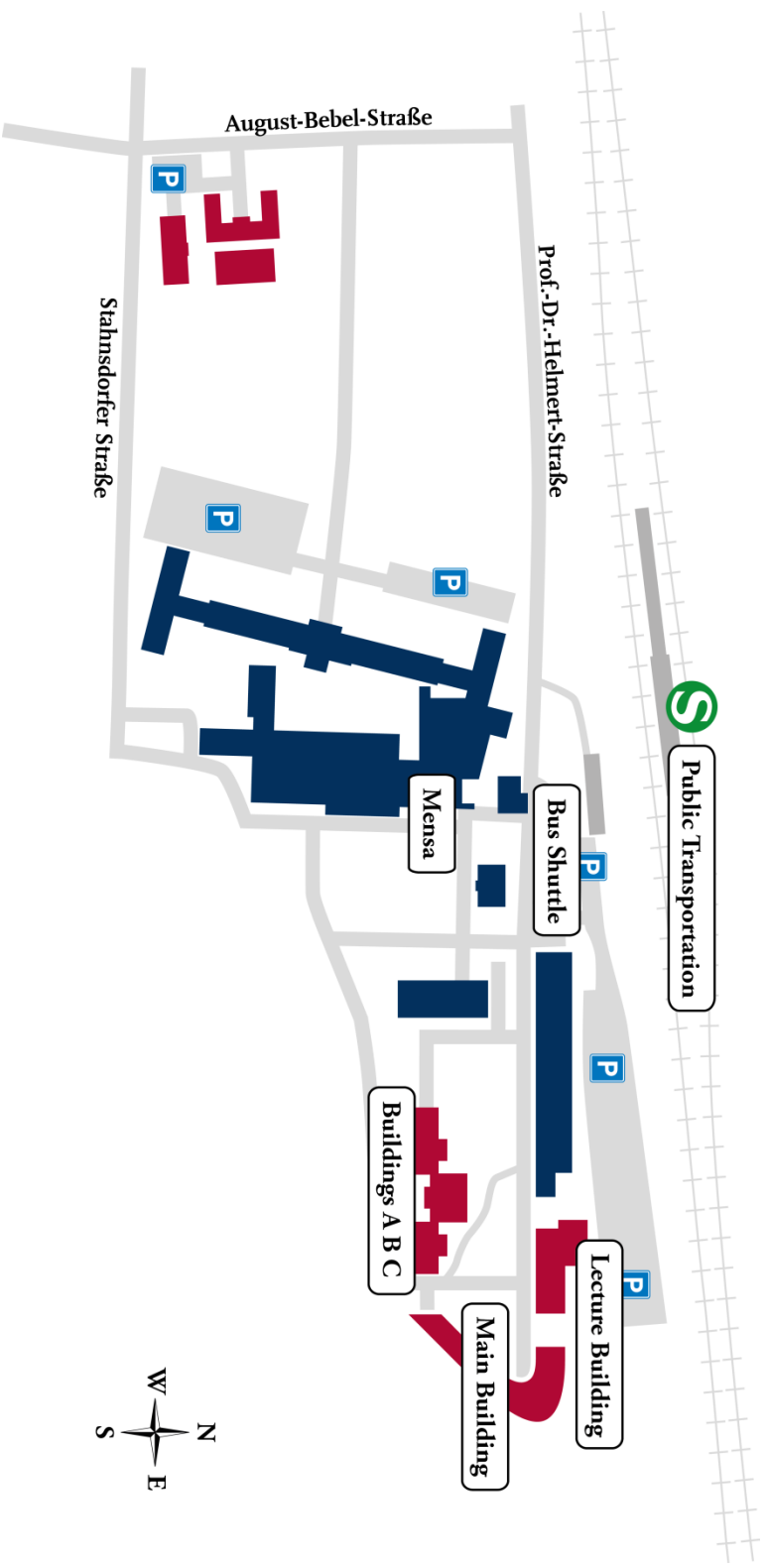Hasso-Plattner-Institut Potsdam, Germany

March 25—30, 2012

Conference Guide

www.aosd.net/2012

August-Bebel-Straße

Stahnsdorfer Straße

Prof.-Dr.-Helmert-Straße

Mensa

Bus Shuttle

Public Transportation

Buildings A B C

Main Building

Lecture Building

N W S E

MODULARITY: aosd.12—Chairs' Welcome

It is our great pleasure to welcome you to *Modularity: aosd.12,* the premiere international research conference on modularity in software and software-intensive systems. *Modularity: aosd.12* is the 11th annual International Conference on *Aspect-Oriented Software Development (AOSD),* and the first in which the conference committee will give an award for the most influential paper published in the Proceedings of the conference 10 years ago: in 2002.

This year's conference continues to broaden of the scope of the field to address all aspects of modularity, abstraction, and separation of concerns as they pertain to software, including new forms, uses, and analysis of modularity, along with the costs and benefits, and tradeoffs involved in their application. *Modularity: aosd.12* provides the international computer science research community and its many sub-disciplines (including software engineering, languages, and computer systems) with unique opportunities to come together to share and discuss perspectives, results, and visions with others interested in modularity as well as in the languages, development methods, architectures, algorithms, and other technologies organized around this fundamental concept.

The *Modularity: aosd.12* conference comprises two main events: Research Results and Modularity Visions. Both events invited full, scholarly papers of the highest quality on results and new ideas in areas that include but are not limited to complex systems, software design and engineering, programming languages, cyber-physical systems, and other areas across the whole system life cycle.

Papers submitted to the Research Results track were reviewed in accordance with the highest established standards of scientific rigor applied in peer review of putative research results. Reviewers assessed works in terms of research problem formulations, novelty and sophistication of proposed solutions, clarity and significance of hypotheses, proper design and execution of experimental or analytical assessments, sound interpretation of data, and correct characterization of work in relation to existing knowledge.

Papers submitted to the Modularity Visions track were reviewed in accordance with the highest established standards of scientific rigor applied in peer review of scientific research proposals. Reviewers assessed works in terms of research problem formulations, novelty and sophistication of proposed solutions, clarity and significance of hypotheses, compelling preliminary results, proposals for sound future experimental or analytical assessments and interpretation of data, and correct characterization of work in relation to existing knowledge.

The Results track attracted 79 submissions from across the world. Of these, 20 papers were accepted for publication, for a 25% acceptance rate. The program committee accepted papers in three rounds. In each round papers each paper was accepted, rejected, or (except in the last round) invited for revision and a second review. Five papers were invited for revision and a second review, all of which were ultimately accepted. The Visions track reviewed ten papers, one of which was referred from the Results track. Of these, three papers were accepted for publication for a 30% acceptance rate.

Our keynote and heart of technology speakers are Lars Bak, James O. Coplien, and Martin C. Rinard. Lars will report on implementing language-based virtual machines; Jim will talk about objects of the people, for the people, and by the people; and Martin will tell us what to do when things go wrong and how to recover in complex systems. Our banquet speech will be given by Cristina Videira Lopes on aspects as latent topics.

We wish to thank all members of our organizing and program committees and all co-reviewers.

We are looking forward to an interesting and inspiring *Modularity: aosd.12*.

Robert Hirschfeld
General Chair
Hasso-Plattner-Institut, Potsdam, Germany

Michael Haupt
Organizing Chair
Oracle Labs, Potsdam, Germany

Éric Tanter
Research Results Program Chair
Universidad de Chile, Chile

Kevin Sullivan
Modularity Visions Program Chair
University of Virginia, USA

Richard P. Gabriel
Heart of Technology Lectures Chair
IBM Research, USA

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Photo: HPI / Jan Burhenne

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	Sunday 25		Monday 26			Tuesday 27		
	Student Forum A-1.1 A-1.2		Workshops					
			Registration			Registration		
9:00			WP 1	WP 2	WP 3	WP 4	WP 5	WP 6
9:30	Registration	Meet & Greet	**FOAL**	**Vari-Comp**	**ESCOT**	**DSAL**	**MISS**	**Nemara**
10:00	**Workshop to Identify Viable Areas of Research Within AOSD**		HS-2	A-1.1	A-2.1	HS-2	A-1.1	A-2.1
10:30			Coffee Break					
11:00			WP 1	WP 2	WP 3	WP 4	WP 5	WP 6
11:30			**FOAL**	**Vari-Comp**	**ESCOT**	**DSAL**	**MISS**	**Nemara**
12:00			HS-2	A-1.1	A-2.1	HS-2	A-1.1	A-2.1
12:30	Lunch							
13:00			Lunch			Lunch		
13:30								
14:00	**Panel of Experts**		WP 1	WP 2	WP 3	WP 4	WP 5	WP 6
14:30			**FOAL**	**Vari-Comp**	**ESCOT**	**DSAL**	**MISS**	**Nemara**
15:00			HS-2	A-1.1	A-2.1	HS-2	A-1.1	A-2.1
15:30	Coffee Break		Coffee Break					
16:00	**Group Work and Presentations**		WP 1	WP 2	WP 3	WP 4	WP 5	WP 6
16:30			**FOAL**	**Vari-Comp**	**ESCOT**	**DSAL**	**MISS**	**Nemara**
17:00			HS-2	A-1.1	A-2.1	HS-2	A-1.1	A-2.1
17:30	Break		Bus Shuttle or Public Transportation					
18:00								
18:30								
19:00	Group Dinner (self-pay)		Reception			Steering Committee Meeting		
19:30			Poster Session	Student Research Competition				
20:00						H-E.43		
20:30			Café Hundertwasser					
21:00								

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Wednesday 28		Thursday 29		Friday 30		
Conference						
Registration		Registration		Registration		
Keynote **Martin C. Rinard** HS-1		Keynote **Jim Coplien** HS-1		Keynote **Lars Bak** HS-1		9:00 9:30 10:00
Coffee Break		Coffee Break		Coffee Break		10:30
Session 1 **Features** HS-1	Demos 1 PHANtom LARA H.E-51	Session 3 **Languages** HS-1		Session 6 **Modularity in Systems Software** HS-1		11:00 11:30 12:00
Lunch		Lunch		Lunch		12:30 13:00 13:30
				Most Influencial Paper Award HS-1		14:00
Session 2 **Debugging** HS-1	Student Research Competition A-1.1	Session 4 **Interference** HS-1	Demos 2 PHANtom Emergo H.E-51	Session 7 **Architecture and Design** HS-1		14:30 15:00
Coffee Break		Coffee Break		Coffee Break		15:30
Heart of Technology **Jim Coplien** HS-1		Session 5 **Empirical** HS-1		Session 8 **Implementing Languages** HS-1	Demos 3 LARA Emergo H.E-51	16:00 16:30 17:00
Bus Shuttle		Bus Shuttle or Public Transportation				17:30 18:00 18:30
Boat Trip		Banquet Speech by **Crista Lopes** SRC Awards Historische Mühle (near Park Sanssouci)				19:00 19:30 20:00 20:30 21:00

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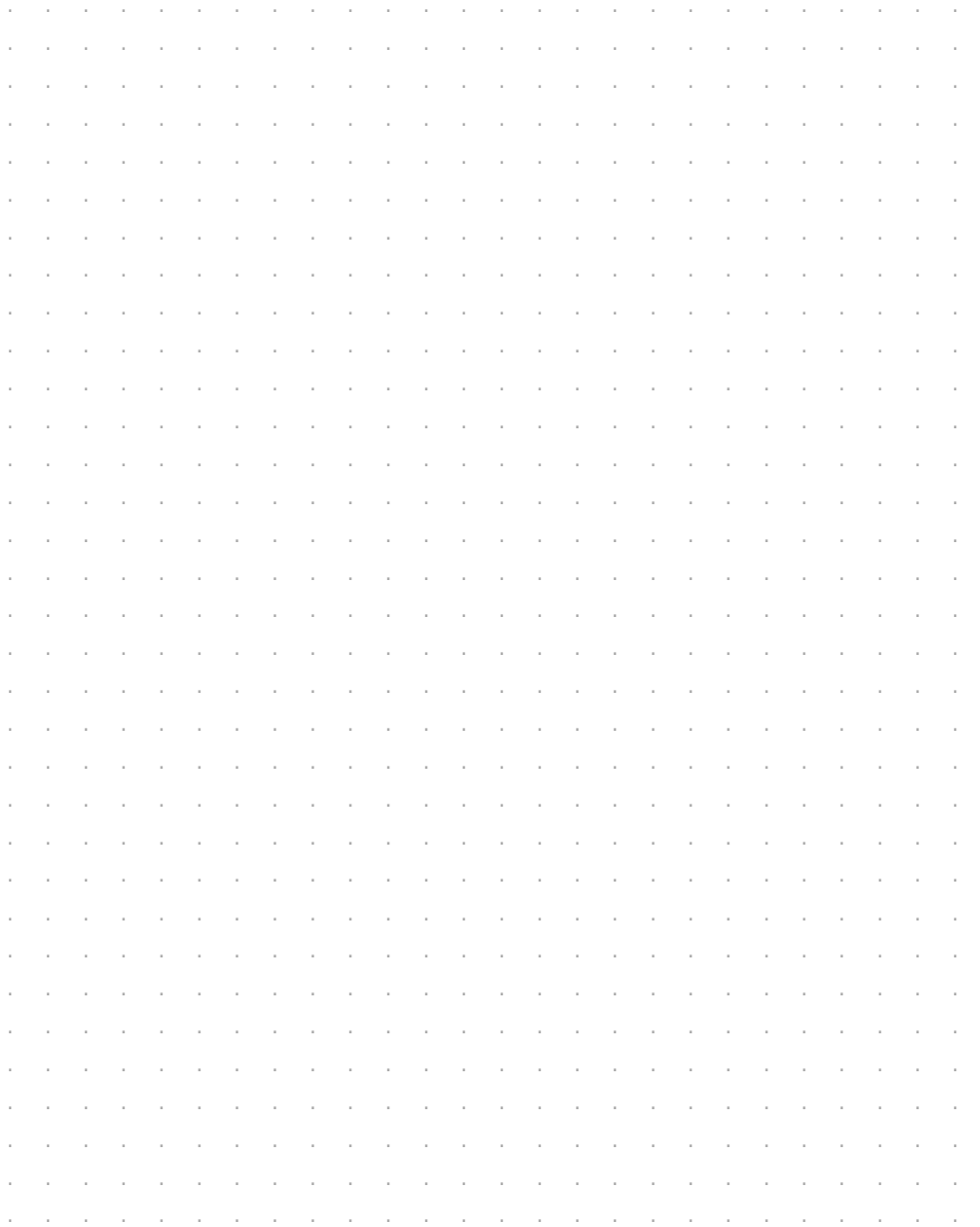
9:30 – 10:00	**Registration** (Building A, Ground Floor)
	Meet and Greet (A-1.1, A-1.2)

10:00 – 12:00 **Workshop to Identify Viable Areas of Research Within AOSD**

A-1.1 A-1.2 Given the move to a more inclusive program of modularity, the forum will consider the evolution of AOSD research and have students identify areas of research that are in line with the new directions of this community. Students will identify viable research strategies and key research questions related to these AOSD research topics.

12:00 – 13:30 **Lunch** (Ulf's Cafe)

13:30 – 15:30 **Panel of Experts**

A-1.1 A-1.2 Dr. Christoph Bockisch, University of Twente, The Netherlands
Dr. Michael Haupt, Oracle Labs Potsdam, Germany
Prof. Dr. Olaf Spinczyk, Technical University of Dortmund, Germany
Dr. Stefan Hanenberg, University of Duisburg-Essen, Germany

Each panelist will provide a basic overview of their existing research and specifically how it fits with the new directions of AOSD research and how it differs from their first work in the area of AOSD. Results from the morning session will form the basis for the questions to the panel to elicit expert feedback student perspectives.

15:30 – 15:45 **Coffee Break**

15:45 – 17:45 **Group Work and Presentations**

A-1.1 A-1.2 Based on the results of the previous two sessions, students will be grouped and will work together on poster paper to outline a possible new research project.

18:00 **Group Dinner** (self-pay)

8:30 – 9:00	**Registration** (Lecture Hall)
9:00 – 12:30	**Workshops 1-3** (in parallel; coffee break at 10:30)
HS-2	FOAL 2012: Foundations of Aspect-Oriented Languages www.eecs.ucf.edu/FOAL/index-2012.shtml
A-1.1	VariComp'12: 3rd International Workshop on Variability and Composition www.aosd.net/workshops/varicomp/2012
A-2.1	ESCOT 2012: 3rd International Workshop on Empirical Evaluation of Software Composition Techniques dawis2.icb.uni-due.de/events/escot2012
12:30 – 14:00	**Lunch** (Mensa)
14:00 – 17:30	**Workshops 1-3** (continued; see above; coffee break at 15:30)
17:30 – 19:00	**Bus Shuttle or Public Transportation**
19:00 – 21:00	**Reception**

Café Hundertwasser
Kurfürstenstraße 52
14467 Potsdam

Places: http://g.co/maps/mfpjd

Poster Session

Symmetric Aspect-Oriented Development Using Contemporary Tools. Jaroslav Bálik

Modular Resource-Aware Applications. Steven te Brinke, Somayeh Malakuti, Lodewijk Bergmans, Christoph Bockisch

Modularity for HPC: WootinJ. Masayuki Ioki, Shumpei Hozumi, Shigeru Chiba

A Declarative Language for Setting Composable Breakpoints. Haihan Yin, Christoph Bockisch

Integrating Events and Methods into a Single Language Construct. YungYu Zhuang, Chiba Shigeru

Student Research Competition – Posters

A Unified Formal Model for Service Oriented Architecture to Enforce Security Contracts. Diana Allam

Compositional Verification of Events and Aspects. Cynthia Disenfeld

Controlling Aspects with Membranes. Ismael Figueroa

An Aspect-Oriented Framework for Development of Dynamic Content. Kohei Nagashima

Tearing Down The Multicore Barrier For Web Applications. Jens Nicolay

Adding high-level concurrency to EScala. Jurgen M. Van Ham

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8:30 – 9:00	**Registration** (Lecture Hall)
9:00 – 12:30	**Workshops 4-6** (in parallel; coffee break at 10:30)

| HS-2	DSAL'12: Workshop on Domain-Specific Aspect Languages www.dsal.cl/2012
A-1.1	MISS 2012: 2nd Workshop on Modularity in Systems Software www.aosd.net/workshops/miss/2012
A-2.1	NEMARA 2012: Next Generation Modularity Approaches for Requirements and Architecture sites.google.com/site/nemara2012

12:30 – 14:00	**Lunch** (Mensa)
14:00 – 17:30	**Workshops 4-6** (continued; see above; coffee break at 15:30)
19:00 – 21:00	**Steering Committee Meeting** (H-E.43)
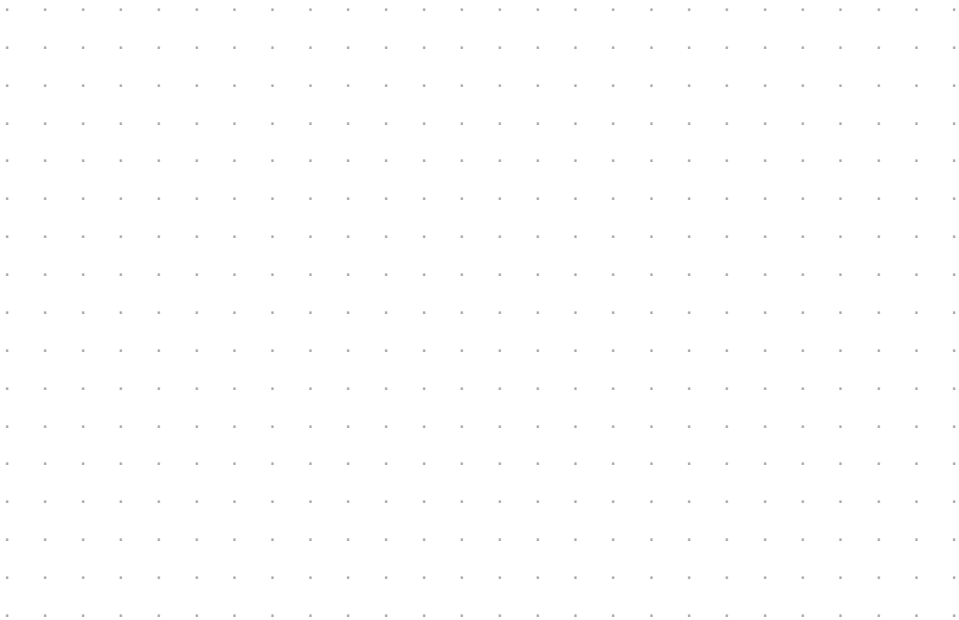
8:30 – 9:00	**Registration** (Lecture Hall)	

9:00 – 10:30 **Keynote 1** (Chair: Richard P. Gabriel)

HS-1 What To Do When Things Go Wrong: Recovery in Complex (Computer) Systems
Martin C. Rinard

11:00 – 12:30 **Papers Session 1: Features** (Chair: David Lorenz)

HS-1 Separation of Concerns in Feature Modeling: Support and Applications (Research Results)
Mathieu Acher, Philippe Collet, Philippe Lahire, Robert France

Intraprocedural Dataflow Analysis for Software Product Lines (Research Results)
Claus Brabrand, Márcio Ribeiro, Társis Tolêdo, Paulo Borba

Features and Object Capabilities: Reconciling Two Visions of Modularity (Modularity Visions)
Salman Saghafi, Kathi Fisler, Shriram Krishnamurthi

H-E.51 **Demonstrations 1** (in parallel with paper session 1)

PHANtom: An Aspect Language for Pharo Smalltalk.
Johan Fabry

Experiments with the LARA Aspect-Oriented Approach
João M. P. Cardoso

12:30 – 14:00 **Lunch** (Mensa)

14:00 – 15:30 **Papers Session 2: Debugging** (Chair: Wouter Joosen)

HS-1 Two-Way Traceability and Conflict Debugging for AspectLTL Programs (Research Results)
Shahar Maoz, Yaniv Sa'ar

A Debug Interface for Debugging Multiple Domain Specific Aspect Languages (Research Results)
Yoav Apter, David Lorenz, Oren Mishali

A Complete Debugger for Aspect-Oriented Programming (Research Results)
Haihan Yin, Christoph Bockisch, Mehmet Aksit

H-E.51 **Student Research Competition – Presentations** (in parallel)

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15:30 – 16:00		**Coffee Break**

16:00 – 17:30 **Heart-of-Technology Lecture** (Chair: Shigeru Chiba)

HS-1 A tour of the Data-Context-Interaction Paradigm
Jim Coplien

17:30 – 19:00 **Bus Shuttle**

Use the bus shuttle directly from HPI to the point of departure and vice versa. See map on inside front cover.

19:00 – 21:00 **Boat Trip**

Places: http://g.co/maps/mfpjd

We will take you on a boat trip on the Havel lakes. You will see many beautiful and historical locations, including for example Glienicker Brücke (Glienicke Bridge), which is famous for the exchanges of captured spies having taken place in the Cold War period. Aboard the ship, a dinner buffet and drinks will be available.
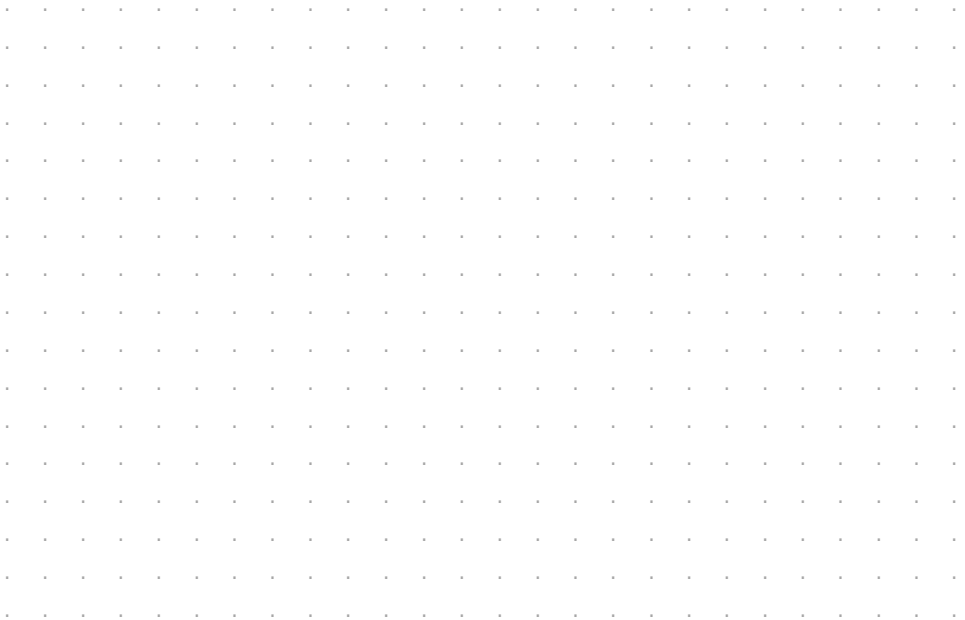
| 8:30 – 9:00 | **Registration** (Lecture Hall) |

9:00 – 10:30 **Keynote 2** (Chair: Kevin Sullivan)

HS-1 Objects of the people, for the people, and by the people
Jim Coplien

11:00 – 12:30 **Papers Session 3: Languages** (Chair: Mario Südholt)

HS-1 A Monadic Interpretation of Execution Levels and Exceptions
for AOP (Research Results)
Nicolas Tabareau

Adaptable Generic Programming with Required Type Specifications
and Package Templates (Research Results)
Eyvind W. Axelsen, Stein Krogdahl

Do We Really Need to Extend Syntax for Advanced
Modularity? (Modularity Visions)
Shigeru Chiba, Michihiro Horie, Kei Kanazawa, Fuminobu Takeyama,
Yuuki Teramoto

12:30 – 14:00 **Lunch** (Mensa)

14:00 – 15:30 **Papers Session 4: Interference** (Chair: Eric Bodden)

HS-1 A Closer Look at Aspect Interference and Cooperation (Research Results)
Cynthia Disenfeld, Shmuel Katz

Management of Feature Interactions with Transactional
Regions (Research Results)
Thomas Cottenier, Aswin Van Den Berg, Thomas Weigert

Method Shelters: Avoiding Conflicts among Class Extensions Caused
by Local Rebinding (Research Results)
Shumpei Akai, Shigeru Chiba

H-E.51 **Demonstrations 2** (in parallel with paper session 4)

PHANtom: An Aspect Language for Pharo Smalltalk
Johan Fabry

Emergo: A Tool for Improving Maintainability of Preprocessor-based
Product Lines
Márcio Ribeiro, Társis Tolêdo, Johnni Winther, Claus Brabrand,
Paulo Borba

15:30 – 16:00 **Coffee Break**

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16:00 – 17:30   **Papers Session 5: Empirical** (Chair: Stefan Udo Hanenberg)

HS-1   An Exploratory Study of the Design Impact of Language Features for Aspect-oriented Interfaces (Research Results)
Robert Dyer, Hridesh Rajan, Yuanfang Cai,

Comprehensively Evaluating Conformance Error Rates of Applying Aspect State Machines for Robustness Testing (Research Results)
Shaukat Ali, Tao Yue, Zafar Malik

Are Automatically-Detected Code Anomalies Relevant to Architectural Modularity? An Exploratory Analysis of Evolving Systems (Research Results)
Isela Macia Bertrán, Joshua Garcia, Daniel Popescu,
Alessandro Garcia, Nenad Medvidovic, Arndt Von Staa

17:30 – 19:00   **Bus Shuttle or Public Transportation**

Use the bus shuttle directly from HPI to the Mövenpick Restaurant and vice versa. On the way back, the bus will additionally stop at the Mercure Hotel.

19:00 – 21:00   **Banquet** (with speech by **Crista Lopes**)

Mövenpick Potsdam, Historische Mühle
Zur Historischen Mühle 2
14469 Potsdam

Places: http://g.co/maps/mfpjd

The conference banquet takes place in close proximity to one of the most beautiful areas in Potsdam, Sanssouci Park. Take a walk around before the banquet and visit the famous terraces of Sanssouci Palace. The banquet includes a speech delivered by Crista Lopes.

Additionally, the best student research competition projects will be awarded.

8:30 – 9:00	**Registration** (Lecture Hall)	

9:00 – 10:30   **Keynote 3** (Chair: Éric Tanter)

HS-1   Implementing Language-Based Virtual Machines
Lars Bak

11:00 – 12:30   **Papers Session 6: Modularity in Systems Software**
(Chair: Michael Haupt)

HS-1   LARA: An Aspect-Oriented Programming Language for Embedded
Systems (Research Results)
João Cardoso, Tiago Carvalho, José Coutinho, Wayne Luk,
Ricardo Nobre, Pedro Diniz, Zlatko Petrov

ContextErlang: Introducing Context-oriented Programming in the
Actor Model (Research Results)
Guido Salvaneschi, Carlo Ghezzi, Matteo Pradella

Fine-grained Modularity and Reuse of Virtual Machine
Components (Modularity Visions)
Christian Wimmer, Stefan Brunthaler, Per Larsen, Michael Franz

12:30 – 13:45   **Lunch** (Mensa)

13:45 – 14:30   **Most Influential Paper Award** (Chair: Richard P. Gabriel)

HS-1   Dynamic Weaving for Aspect-Oriented Programming
Andrei Popovici, Thomas Gross, Gustavo Alonso

14:30 – 15:30   **Papers Session 7: Architecture and Design** (Chair: Mira Mezini)

HS-1   Multi-View Refinement of AO-Connectors in Distributed Software
Systems (Research Results)
Steven Op de beeck, Marko van Dooren, Bert Lagaisse,
Wouter Joosen

Weaving Dynamical Aspects in HiLA (Research Results)
Gefei Zhang, Matthias Hölzl

15:30 – 16:00   **Coffee Break**

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16:00 – 17:30   **Papers Session 8: Implementing Languages**
(Chair: Hidehiko Masuhara)

HS-1   An Object-oriented Framework for Aspect-oriented
Languages (Research Results)
Marko van Dooren, Eric Steegmans, Wouter Joosen

Reusing Non-Functional Concerns Across Languages (Research Results)
Myoungkyu Song, Eli Tilevich

DiSL: a Domain-Specific Language for Bytecode
Instrumentation (Research Results)
Lukas Marek, Alex Villazon, Yudi Zheng, Danilo Ansaloni,
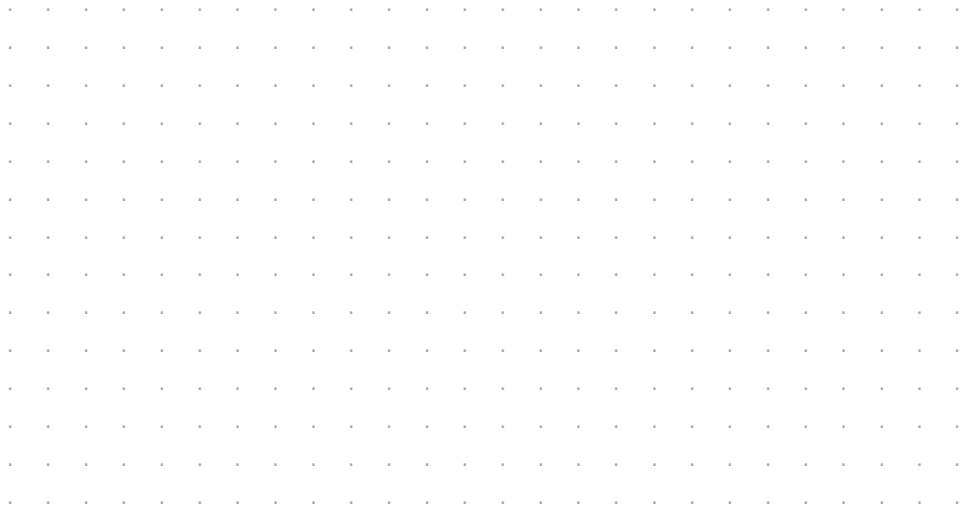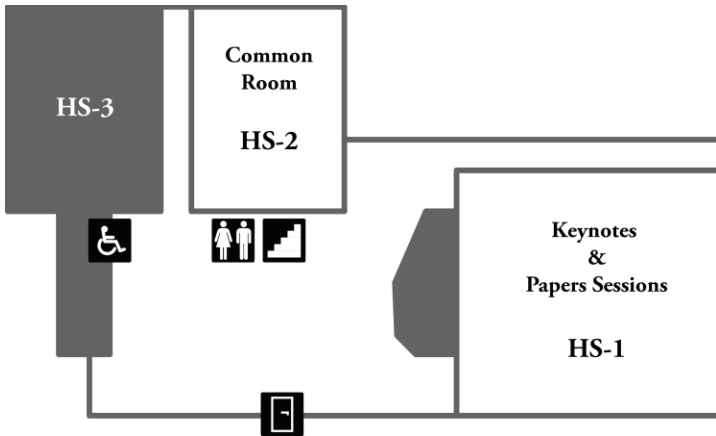Walter Binder, Zhengwei Qi

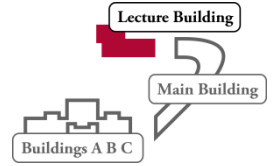H-E.51   **Demonstrations 3** (in parallel with papers session 8)

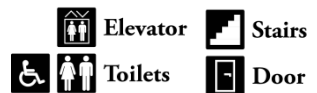Experiments with the LARA Aspect-Oriented Approach.
João M. P. Cardoso

Emergo: A Tool for Improving Maintainability of Preprocessor-based
Product Lines
Márcio Ribeiro, Társis Tolêdo, Johnni Winther, Claus Brabrand,
Paulo Borba

N
W E
S

Lecture Building

Main Building

Buildings A B C

HS-3

Common Room

HS-2

Keynotes
&
Papers Sessions

HS-1

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Lecture Building

Main Building

Buildings A B C

"Bellevue"
Steering Commitee

H-E.43

H-E.51

H-E.52

Demonstrations
Common Room

Elevator   Stairs

Toilets   Door
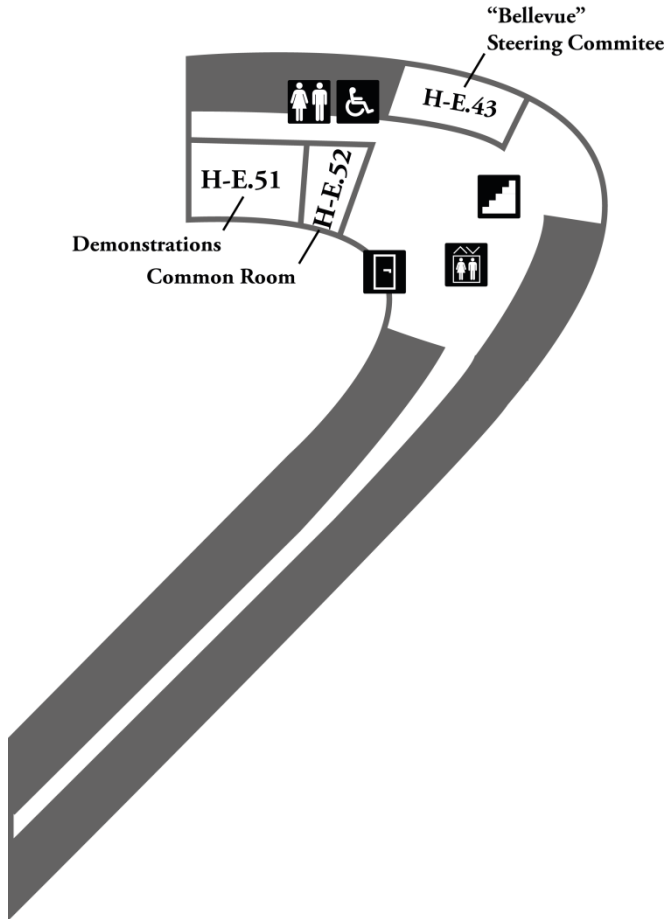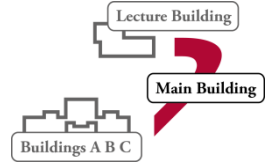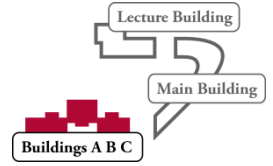
First Floor (Ground Floor)

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Second Floor

Internal Area
C-1

Internal Area
A-1

A-1.2

A-1.1

Internal Area
B-1

Third Floor

Internal Area
C-2

Internal Area
A-2

A-2.2

A-2.1

Deck
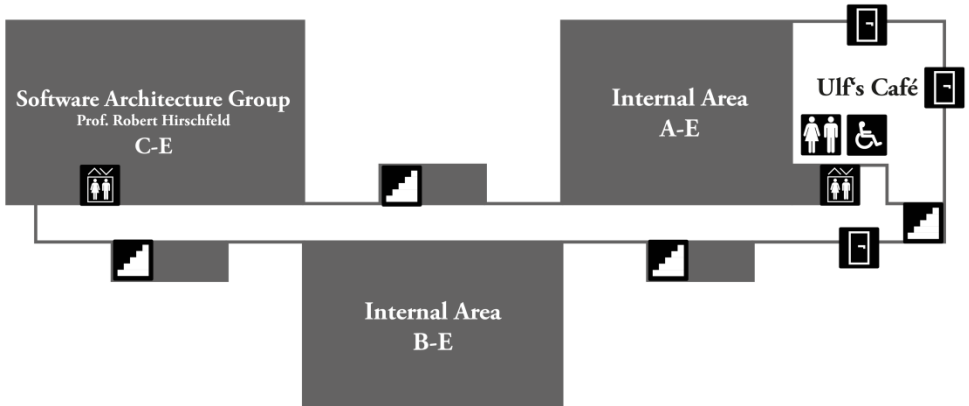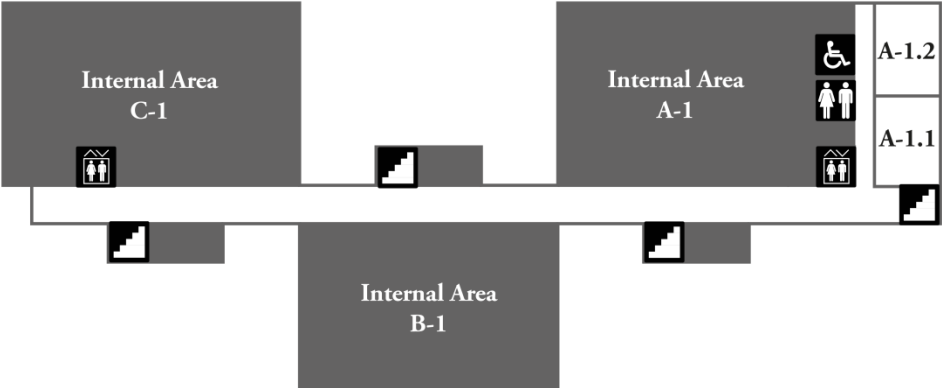
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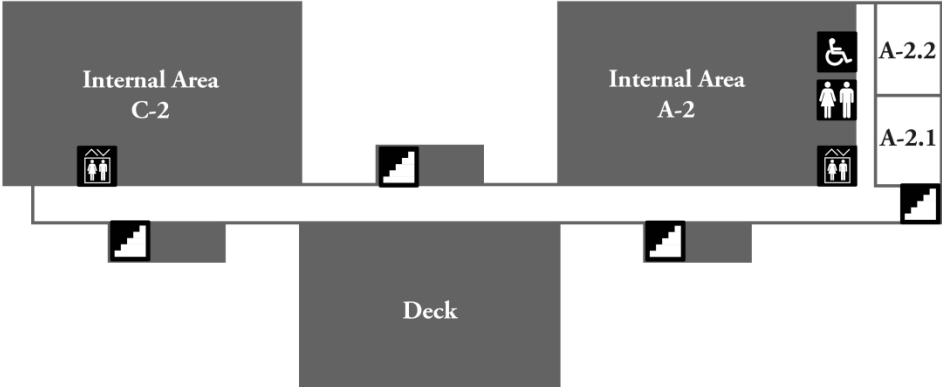
Research Results

Program Chair: Éric Tanter, Universidad de Chile, Chile

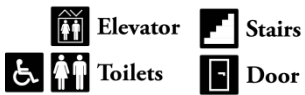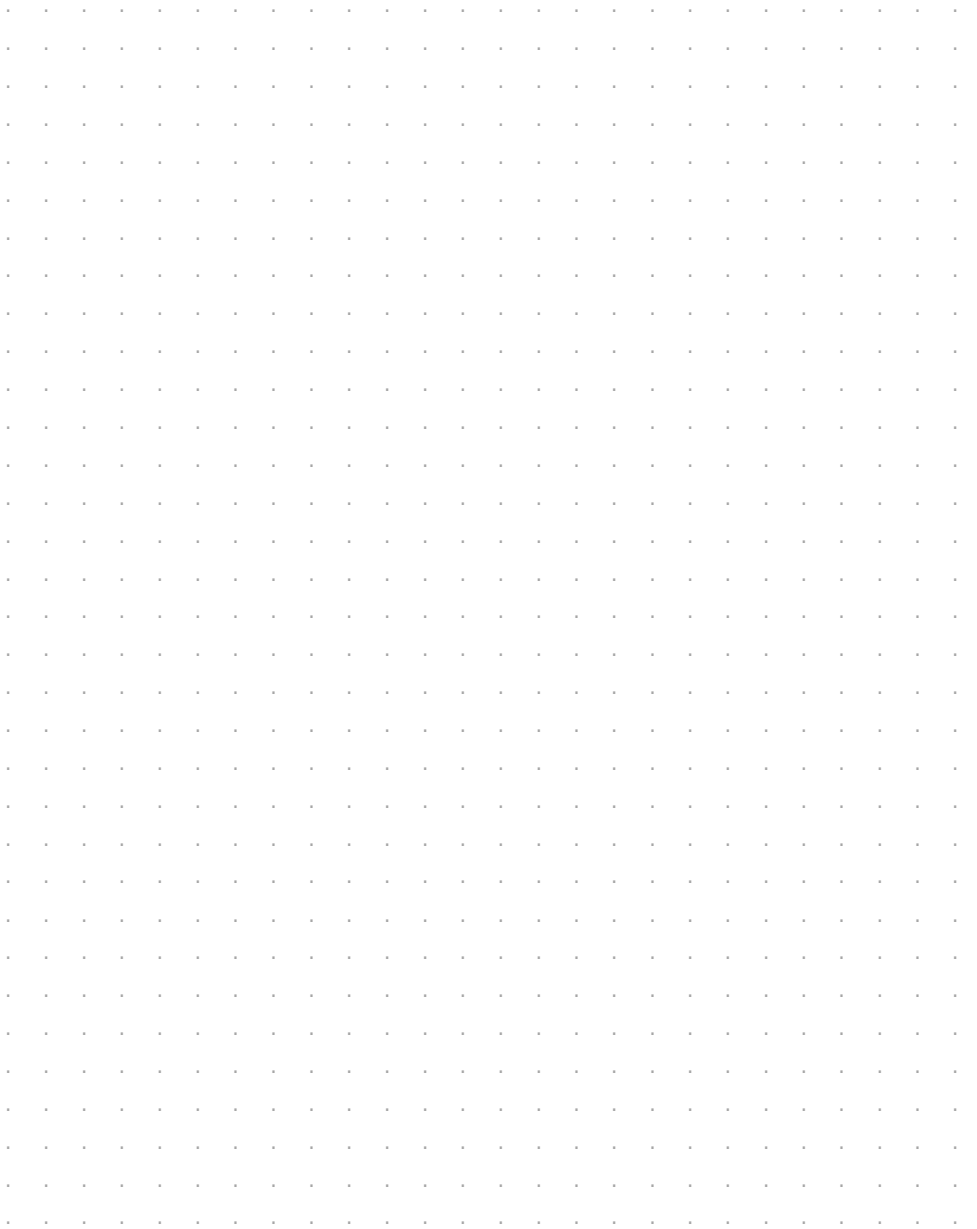Modularity transcending traditional abstraction boundaries is essential for developing complex modern systems - particularly software and software-intensive systems. Aspect-oriented and other new forms of modularity and abstraction are attracting a great deal attention across many domains within and beyond computer science. As the premier international conference on modularity, AOSD continues to advance our knowledge and understanding of separation of concerns, modularity, and abstraction in the broadest senses of these terms.

Research Results papers contribute significant new research results with rigorous and substantial validation of specific technical claims based on scientifically sound reflections on experience, analysis, or experimentation.

Schedule: All sessions from Wednesday, March 28th, until Friday, March 30th
11:00, 14:00, and 16:00

Modularity Visions

Program Chair: Kevin Sullivan, University of Virginia, USA

Modularity properties are key determinants of quality in information systems, software, and system production processes. Modularity influences system diversity, dependability, performance, evolution, the structure and the dynamics of the organizations that produce systems, human understanding and management of systems, and ultimately system value.

Yet the nature of and possibilities for modularity, limits to modularity, the mechanisms needed to achieve it in given forms, and its costs and benefits remain poorly understood. Significant advances in modularity thus are possible and promise to yield breakthroughs in our ability to conceive, design, develop, validate, integrate, deploy, operate and evolve modern information systems and their underlying software artifacts.

The Modularity Visions (MV) track of AOSD 2012 consists of papers presenting compelling insights into modularity in information systems, including its nature, forms, mechanisms, consequences, limits, costs and benefits. Rather than *ex post results*, MV seeks promising *ex ante proposals* for future work. The scope of MV is broad: open to submissions from all areas of computer science, as well as from other fields.

Schedule: Session 1, Wednesday, March 28th, 11:00
Session 3, Thursday, March 29th, 11:00
Session 6, Friday, March 30th, 11:00

What To Do When Things Go Wrong: Recovery in Complex (Computer) Systems

by Martin C. Rinard

We present and analyze a range of techniques for recovering from faults in complex hardware and software systems, from classical techniques that attempt to preserve the abstraction of perfection in the presence of faults to emerging techniques that adapt application functionality to transcend faults, overcome implementation errors in both the hardware and software, and adapt to the characteristics of the underlying execution environment.

Bio

Martin Rinard is a Professor in the MIT Department of Electrical Engineering and Computer Science and a member of the MIT Computer Science and Artificial Intelligence Laboratory. His research interests include parallel and distributed computing, programming languages, program analysis, program verification, software engineering, computer security, and computer systems. Much of his current research focuses on techniques that enable software systems to to survive otherwise fatal errors or security attacks.

Professor Rinard holds a PhD in Computer Science from Stanford University. He is an ACM Fellow and has received many awards including an Alfred P. Sloan Research Fellowship, an NSF CAREER Award, and the Most Influential Paper in 20 Years Award in the area of Concurrent Constraint Programming (awarded by The Association for Logic Programming in 2004).

Chair: Richard P. Gabriel

Schedule: Wednesday, March 28th, 9:00 – 10:30, HS-1

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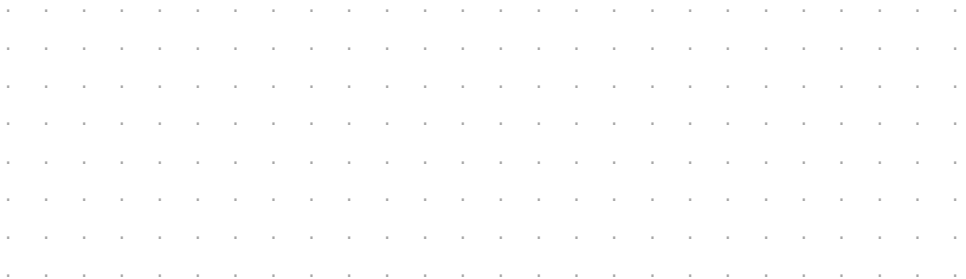
A Tour of the Data-Context-Interaction Paradigm

(Heart-of-Technology Lecture)

by Jim Coplien

Most programming today is based on class-based development, and while it enables the programmer in the short term it represents only a half-step into the mental model of the end user. What's worse is that it fails to account for the long-term action in program evolution, which may be based more on what procedures do well than what classes do. DCI (Data, Context and Interaction) is an integrated worldview of programs and their people that unifies the erstwhile "what-the-system-is" world of classes with the "what-the-system-does" world of processes. It is an object model that captures the mental models of programmers and users alike. This lecture is a practical introduction to DCI. It will lay a brief foundation in class-based programming and domain analysis, and advance into techniques based on role modeling and implementing use cases within dynamic run-time components called Contexts.

Bio

Jim Coplien is an old programming language shark who now does world-wide consulting on Agile software development methods and architecture. He is one of the founders of the software pattern discipline, and his organizational patterns work is one of the foundations of both Scrum and XP. He has written several books on programming, software design, and organizational design.

He currently works for Gertrud & Cope in Denmark, and is a partner in the Scrum Foundation. His latest book, together with Gertrud Bjørnvig, concerns Lean Software Architecture and Agile Software Development.

Chair: Shigeru Chiba

Schedule: Wednesday, March 28th, 16:00 – 17:30, HS-1

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Objects of the people, for the people, and by the people
by Jim Coplien

Computers were invented largely as mental aids. In inventing object-orientation, Alan Kay renewed that vision on a metaphorical level that no longer subordinated computers to human minds. Trygve Reenskaug tried to link the worlds of the human and the computer together with Model-View-Controller, but at the time he got only half the job done. Today we're stuck in this Kantian object world where individual objects act alone and programmers live inside of classes looking out: there is rarely any sense of collective behavior in object-oriented systems, and there is rarely any degree of behavioral (self-) organization. I have been working with Trygve on a paradigm called DCI that places the human experiences of design and use of programs equally at center stage. It balances the object interaction view with the traditional data conceptualization of class-oriented programming. DCI offers a vision of computers and people being mutually alive in Christopher Alexander's sense of great design. It serves Englebart's original vision of object-orientation powering computers as mental adjuncts, as well as Kay's vision as objects as a recursion on the concept of a computer. In this world with a rapidly growing number of increasingly connected human minds, DCI opens up a playful dialogue contrasting metaphors of collective human reasoning and Kay's vision of object computation.

Chair: Kevin Sullivan

Schedule: Thursday, March 29th, 9:00 – 10:30, HS-1

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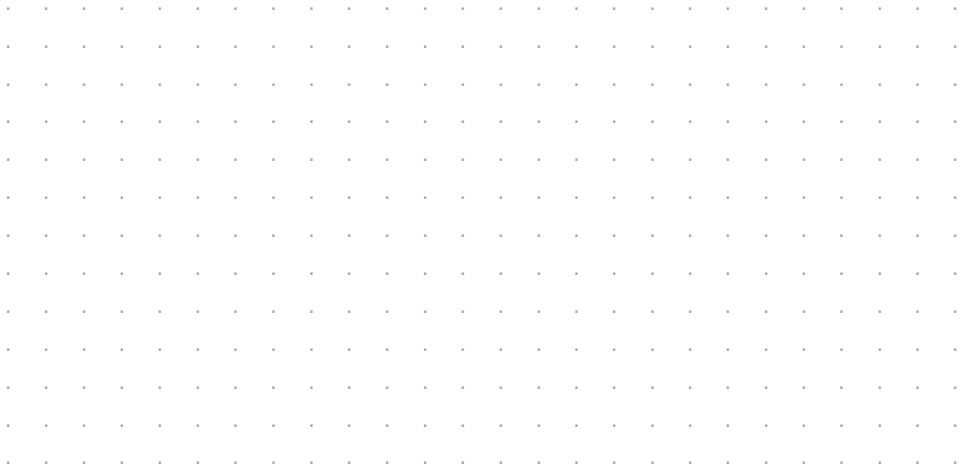
Aspects as Latent Topics (Banquet Speech)

by Cristina Videira Lopes

Underlying the work on Aspect-Oriented Programming (AOP) there is a premise that no one ever challenged: the existence of cross-cutting concerns that find their way to programs in a tangled and scattered manner. We've all seen it. But do tangling and scattering of program concerns really exist in real programs? Do they have a strong effect or is this one of those academic non-issues? That was the question we set out to answer in a paper we published at OOPSLA 2008. And the answer was: yes, these effects do exist in real programs, they are noticeable and detectable, and they reveal a few insights on the nature of those concerns. But they raise even more questions for AOP. I will talk about this study and its consequences.

Bio

Crista Lopes is Associate Professor in the Department of Informatics, Bren School of Information and Computer Sciences at the University of California, Irvine. Prior to being in Academia, she worked at the Xerox Palo Alto Research Center (1995-2001), where she helped shape the concept of Aspect Oriented Programming (AOP) and the community around it. She has taken that research thread into the field of Information Retrieval. Her software engineering research work has always been driven by the development of large-scale systems. Recently, she has been working on MMO virtual worlds and their applications beyond gaming. She is a core contributor to the OpenSimulator project, a virtual world platform. She is the recipient of several NSF grants, including a CAREER Award. She is an ACM Distinguished Scientist, a Senior Member of IEEE, and Ohloh Kudos Rank 9. Dr. Lopes has a PhD from Northeastern University, and MS and BS degrees from Instituto Superior Tecnico in Portugal.

Chair: Michael Haupt

Schedule: Thursday, March 29th, 19:00 – 21:00, Historische Mühle

Implementing Language Based Virtual Machines
by Lars Bak

Craftsmanship, innovation, competition, and stubbornness are all ingredients for pushing the envelope of virtual machines.

I've spent the last 25 years striving to perfect the art of creating such systems. A few of them even had real impact: Hotspot for Java and V8 for JavaScript. This talk will highlight both technical and non-technical aspects of taking an idea, building a team around it, and then developing a product. Rest assured, the majority of this presentation will focus on interpreters, compilers, garbage collectors, and performance.

Bio

Lars Bak is a veteran virtual machinist. His passion for designing and implementing object-oriented virtual machines has left marks on several software systems: Beta, Self, Strongtalk, Sun's HotSpot and CLDC HI, OOVM Smalltalk, and V8. Since joining Google in the fall of 2006, Lars has been responsible for the design and implementation of V8. He graduated from Aarhus University in 1988 with a MS degree in computer science.

Chair: Éric Tanter

Schedule: Friday, March 30th, 9:00 – 10:30, HS-1
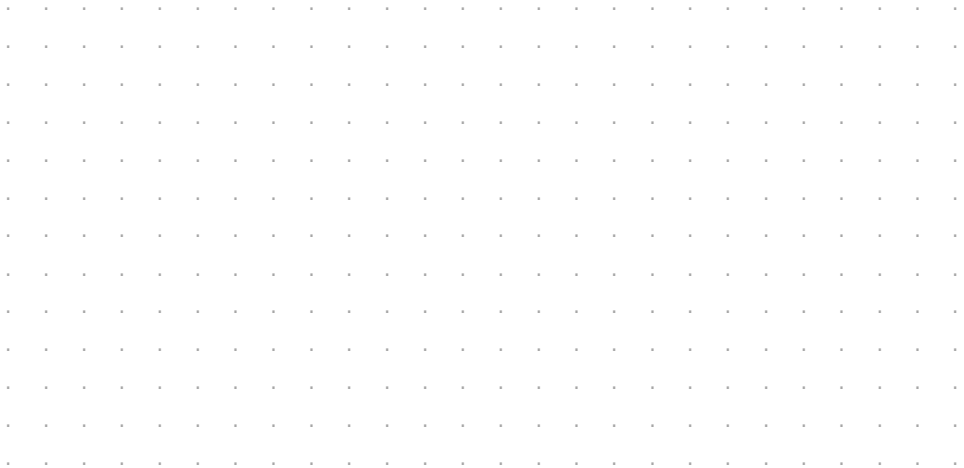
Presented annually to the authors of a paper presented at the AOSD held 10 years prior to the award year, the award includes a prize of € 1000 to be split among the authors of the winning paper. The papers are judged by their influence over the past decade.

Dynamic Weaving for Aspect-Oriented Programming
by Andrei Popovici, Thomas Gross, Gustavo Alonso

The 2002 AOSD paper, "Dynamic Weaving for Aspect-Oriented Programming," presented the first working aspect-oriented system that made it practical to think of aspects as first-class entities that can be deployed / un-deployed dynamically in the context of JVM-based languages. The crux of the approach is an execution environment that directly supports aspect weaving - as opposed to approaches that operate on source code or bytecode and leave the actual runtime unaware of aspects - and the authors demonstrated that this could be achieved in standard language runtime environments. This work spawned much further work in dynamic aspect weaving, which continues to this day.

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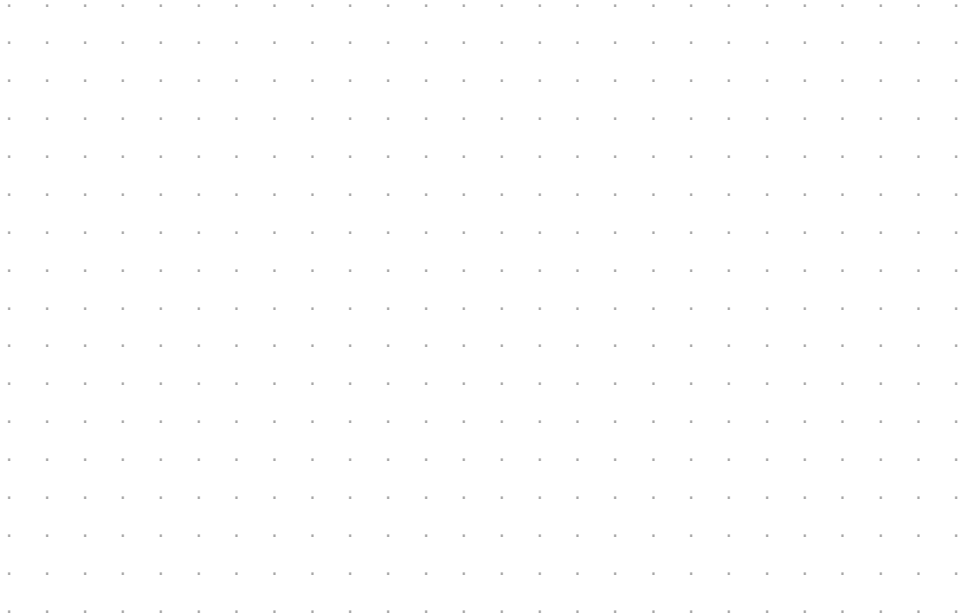
Workshop Reception (Café Hundertwasser)
Monday, March 26th, 19:00 – 21:00

Option A

18:08   Take the RB22 train that leaves S Griebnitzsee Bhf heading for S Flughafen Berlin-Schönefeld Bhf. Leave at Potsdam Hbf.

18:17   At Potsdam Hbf, take the Bus 609 that heads for Kirche Kartzow. Leave at Nauener Tor.

18:28   At Nauener Tor, walk along the bus's driving direction, cross the next street and immediately turn right. Follow the way about 200 m. Find the Café Hundertwasser to the left.

Option B

18:17   Take the S7 train that leaves S Griebnitzsee Bhf heading for Potsdam Hbf.

18:31   At Potsdam Hbf, take the Tram 92 that heads for Kirschallee. Leave at Nauener Tor.

18:38   At Nauener Tor, walk along the tram's driving direction, cross the next street and immediately turn right. Follow the way about 200 m. Find the Café Hundertwasser to the left.

Banquet (Historische Mühle)
Thursday, March 29th, 19:00 – 21:00

Option A

17:17   Take the S7 train that leaves S Griebnitzsee Bhf heading for Potsdam Hbf.

17:52   At Potsdam Hbf, take the Bus 695 that heads for Pirschheide Bhf. Leave at Schloss Sanssouci.

18:07   Leave at Schloss Sanssouci, walk along the bus's driving direction and take the first right. Follow the way about 25 m. Find the Mövenpick to the right.

Option B

17:57   Take the S7 train that leaves S Griebnitzsee Bhf heading for Potsdam Hbf.

18:18   At Potsdam Hbf, take the Bus 612 that heads for Neu Töplitz, Wendeplatz. Leave at Schloss Sanssouci.

18:28   At Schloss Sanssouci, walk along the bus's driving direction and take the first right. Follow the way about 25 m. Find the Mövenpick to the right.

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