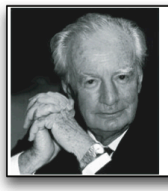
DESIGN AUTOMATION CONFERENCE 49

SAN FRANCISCO, CA, USA

CHA'N'GE

DAC Workshop

# 2nd International Workshop on Computing in Heterogeneous, Autonomous 'N' Goal-oriented Environments



Progetto Roberto Rocca

Massachusetts Institute of Technology

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# CHANGE: Objective



- Its objective is to bring together researchers and industry from all over the world for a wide ranging discussion of self-aware adaptive systems.

- Topics of interest are:
  - system architectures, self-aware operating systems, autonomous self-aware computer architecture, dynamic reconfiguration, applications, embedded processors, adaptive algorithm, biologically inspired systems, etc.

# CHANGE… some data



- CHANGE 2011
  - Co-located with ASPLOS
    - Newport Beach – March 6, 2011
  - Papers presented: 5 + 1 Keynote

- CHANGE 2012
  - DAC Workshop
    - San Francisco – June 3, 2012
  - Papers presented: 6 + 6 Keynotes

# Technical Co-Sponsors



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http://web.mit.edu/progettorocca/

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# Program at a Glance



- Workshop opening [8:50 – 9:10]
- First Session [9:10 – 10:45]
  - Self-Awareness in Software Architectures
- Coffee break [10:45 – 11:00]
- Second Session [11.00 – 12.30]
  - Adaptability and Heterogeneous Computing Architectures
- Lunch [12.35 – 2.00]
- Third Session [2.00 – 3.30]
  - Self-Adaptation for Virtual and Scalable Platforms
- Coffee break [3.35 – 3.50]
- Forth Session [3.50 – 5.50]
  - Industrial prospective on future computing systems
- Closing remarks [5:50 – 6:00]

# First Session [9:10 – 10:45]



- Self-Awareness in Software Architectures
  - Keynote: Reinventing Operating Systems for the Manycore Ubiquitous Swarm
    - John Kubiatowicz (Berkeley)
  - AcOS: an Autonomic Management Layer Enhancing Commodity Operating Systems
    - D. Bartolini, F. Sironi, R. Cattaneo, J. Panerati, D. Sciuto
  - SEEC-AP: Self-Aware Software Architecture Patterns
    - J. Holt, H. Hoffmann

- After:
  - Coffee break [10:45 – 11:00]
  - Second Session [11.00 – 12.30]
    - Adaptability and Heterogeneous Computing Architectures

# Second Session [11:00 – 12:30]



- Adaptability and Heterogeneous Computing Architectures
  - Keynote: Computing Without Processors
    - Satnam Singh (Google)
  - Adaptive hardware platforms for self-optimizing mechatronic system
    - M. Porrmann
  - Guaranteed Fault Recovery Time for FPGA-based TMR Circuits Employing Partial Reconfiguration
    - E. Cetin, O. Diessel

- After:
  - Lunch [12.35 – 2.00]
  - Third Session [2.00 – 3.30]
    - Self-Adaptation for Virtual and Scalable Platforms

- CHANGE will be back at 2:00pm

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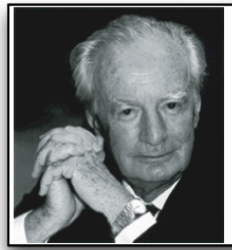

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# Third Session [2:00 – 3:30]



- Self-Adaptation for Virtual and Scalable Platforms
  - Keynote: Opportunities and Challenges for Self-Aware Virtualized Infrastructure Management
    - Xiaoyun Zhu (VMware)
  - S: a scripting language for high-performance RESTful web services
    - D. Bonetta, A. Peternier, W. Binder, C. Pautasso
  - Adaptive Energy-Efficient Resource Sharing for Multi-threaded Workloads in Virtualized Systems
    - C. Hankendi, A. Coskun

- After:
  - Coffee break [3.35 – 3.50]
  - Forth Session [3.50 – 5.50]
    - Industrial prospective on future computing systems

# Forth Session [3:50 – 5:50]



- Industrial prospective on future computing systems
  - Big Data Systems and Architecture
    - Jian Li (IBM Research)
  - Smart Data Structures
    - Jonathan Eastep (Intel)
  - Architectural Musings: Rethinking Computer Systems Architecture
    - C. A. Vick (Qualcomm Research)

- After: Closing remarks [5:50 – 6:00]