

Preface

Scientific workflows are routinely used in most scientific disciplines today, as they provide a systematic way to execute a number of applications in Science and Engineering. They are at the interface of end-users and computing infrastructures, often relying on workflow management systems and a variety of parallel and/or distributed computing resources. In addition, with the drastic increase of raw data volume in many domains, their role is important to assist scientists in organizing and processing their data and leverage High-Performance or High-Throughput computing resources.

The Workshop on Workflows in Support of Large-Scale Science (WORKS) has been established as a premier forum on all aspects in relation to scientific workflows. The 11th edition of the workshop, WORKS 2016, co-located with SC16 in Salt Lake City, Utah, USA, followed the successful tradition of previous years (Paris, 2006; Monterey Bay, 2007; Austin, 2008; Portland, 2009; New Orleans, 2010; Seattle, 2011; Salt Lake City, 2012; Denver, 2013; New Orleans, 2014; Austin, 2015).

WORKS 2016 focuses on the many facets of data-intensive workflow management systems, ranging from job execution to service management and the coordination of data, service, and job dependencies. The workshop covers a broad range of issues in the scientific workflow lifecycle that include: data-intensive workflows representation and enactment; designing workflow composition interfaces; workflow mapping techniques that may optimize the execution of the workflow; workflow enactment engines that need to deal with failures in the application and execution environment; and a number of computer science problems related to scientific workflows such as semantic technologies, compiler methods, fault detection, and tolerance.

The Call for Papers attracted 17 submissions. After a rigorous review process where each paper received at least three reviews, 5 papers were accepted for a full presentation (acceptance rate 29.4%), and another 4 papers were accepted for 5-minute lightning talks. The workshop took place on Monday 14 November 2016 and the program also featured an invited keynote from David Abramson. The talks covered the topical sessions "Workflows and Optimization", "Automation of Workflows" and "Advancing Data-Intensive Workflows". We were pleased to see that the workshop attracted around 60 participants and that the thought-provoking talks led to vibrant discussions. This volume includes the keynote of David Abramson, the 5 full papers accepted and presented at the workshop and revisions of the papers accepted for the 4 lightning talks.

Sandra Gesing
Rizos Sakellariou
Program Chairs WORKS'16

Organization

Steering Committee

David Abramson, University of Queensland, Australia
Malcolm Atkinson, University of Edinburgh, UK
Ewa Deelman, USC Information Sciences Institute, USA
Michela Taufer, University of Delaware, USA

General Chairs

Johan Montagnat, CNRS, Sophia Antipolis, France
Ian Taylor, Cardiff University, UK and University of Notre Dame, USA

Program Chairs

Sandra Gesing, University of Notre Dame, USA
Rizos Sakellariou, University of Manchester, UK

Publicity Chairs

Rafael Ferreira da Silva, USC Information Sciences Institute, USA
Ilia Pietri, University of Athens, Greece

Program Committee

Ilkay Altintas, UCSD, USA
Khalid Belhajjame, Université Paris-Dauphine, France
Adam Belloum, University of Amsterdam, the Netherlands
Ivona Brandic, Vienna University of Technology, Austria
Marian Bubak, AGH, Poland and University of Amsterdam, the Netherlands
Rajkumar Buyya, University of Melbourne, Australia
Ann Chervenak, USC Information Sciences Institute, USA
Daniel de Oliveira, Fluminense Federal University, Brazil
Ewa Deelman, USC Information Sciences Institute, USA
Rafael Ferreira da Silva, USC Information Sciences Institute, USA
Daniel Garijo, USC Information Sciences Institute, USA

Sandra Gesing, University of Notre Dame, USA (co-Chair)
Tristan Glatard, CNRS, France
Pter Kacsuk, MTA SZTAKI, Hungary
Daniel S. Katz, University of Chicago and Argonne National Laboratory, USA
Tamas Kiss, University of Westminster, UK
Dagmar Krefting, University of Applied Sciences Berlin, Germany
Maciej Malawski, AGH University of Science and Technology, Poland
Anirban Mandal, RENCi, UNC Chapel Hill, USA
Andrew Stephen McGough, Durham University, UK
Paolo Missier, Newcastle University, UK
Jarek Nabrzyski, University of Notre Dame, USA
Ilia Pietri, University of Athens, Greece
Radu Prodan, University of Innsbruck, Austria
Omer Rana, Cardiff University, UK
Rizos Sakellariou, University of Manchester, UK (co-Chair)
Domenico Talia, UNICAL, Italy
Andrei Tchernykh, CICESE Research Center, Mexico
Gabor Terstyanszky, University of Westminster, UK
Rafael Tolosana-Calasanz, University of Zaragoza, Spain
Chase Qishi Wu, New Jersey Institute of Technology, USA

External Reviewers

Atakan Aral, Matthew Forshaw, Matthias Janetschek, Roland Mathà, Sasko Ristov.