

Special Issue on

# Using the Open Provenance Model to Address Interoperability Challenges

Guest Editors

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The Journal Future Generation Computer Systems invites authors to submit papers for the Special Issue on *Using the Open Provenance Model to Address Interoperability Challenges*. This special issue follows the Provenance Challenge 3 workshop on the same topic, but is open also to contributions by teams that were not represented at the workshop.

## 1 Background

Data products are increasingly being produced and “mashed-up” by the composition of services and data supplied by multiple parties using a variety of databases, data analysis, management, and collection technologies. This approach is particular evident in e-Science where scientists combine sensor data and shared Web-accessible databases using a variety of local and remote data analysis routines to produce experimental results, which they published and get reused by other scientists. In such environments, provenance (also referred to as audit trail, lineage, and pedigree) plays a critical role as it enables users to understand, verify, reproduce, and ascertain the quality of data products.

An important challenge in the context of these compositional applications is how to integrate the provenance data produced by different systems to be able to construct the full provenance of complex data products across the different systems involved in their derivation. To that end, a common data model for provenance, the *Open Provenance Model* (OPM), was proposed to help ease the integration of provenance data across the heterogeneous environments used for running such applications.

To evaluate the suitability of OPM and gain practical experience with interoperability issues related to provenance across heterogeneous systems, 14 teams from across the world have participated in the Third Provenance Challenge since March 2nd. During this challenge, teams have exchanged provenance data between their provenance

systems using OPM. They have developed OPM serializations in both RDF and XML, ran provenance queries over the exchanged data, and began to create common tools for use with OPM.

## 2 Topics

The aim of the special issue is to provide an archival view of the state-of-the-art of both practical and theoretical issues related to provenance interoperability across systems using the Open Provenance Model.

We therefore encourage submissions in the following areas:

- Theoretical considerations pertaining to the Open Provenance Model
- Semantic inter-operability with the Open Provenance Model
- System issues and OPM (incl, integration, performance, storage)
- Provenance models and comparisons with OPM
- Real applications making use of OPM; usability of provenance
- Open Provenance Model and databases
- Domain specific specialisations of the Open Provenance Model
- Query languages for OPM
- Interoperable queries over the Open Provenance Model
- Provenance tools that use OPM

## 3 Instructions to the authors

Two types of submissions are permitted:

- *short papers* should have a maximum length of 6 pages, whereas
- *long papers* should be limited to 12 pages.

Articles should be submitted electronically via the journal's online submission and peer-review systems at <http://ees.elsevier.com/fgcs/>.  $\LaTeX$  and Word format are acceptable. Formatting instructions are available from the submission page.

## **4 Tentative Schedule**

1. Submission deadline: December 15 2009
2. Notification of acceptance: March 30 2010
3. Camera ready version: May 15 2010

The schedule may be subject to revisions. Prospective authors are invited to make themselves known to the editors ahead of time to facilitate the harmonization of the issue and ensure that the authors will be informed of any change.