May 25: Ewa Deelman, Advancing Computational Productivity Through Automation

SYNOPSIS:

This talk will describe the challenges in the area of scientific workflows, including how they are used to advance science in a number of domains, and how state-of-the-art software systems, such as Pegasus, meet the application and computing infrastructure challenges. Pegasus enables scientists to describe the workflows in an abstract, resource-independent way. That description includes the definition of the workflow steps and the data they take in and generate, but does not include low-level cyber-infrastructure information. Given the abstract workflow description and the information about the execution environment (composed of potentially distributed data sources and systems), a planner can map the computational tasks onto the available resources and plan the movement of data across distributed resources. The planning process also opens up opportunities for performance optimization and fault-tolerance. The talk will describe example applications, including LIGO, the gravitational-wave physics experiment that recently confirmed the existence of gravitational waves. The talk will touch upon the issues the applications face, and how Pegasus can help them execute in a number of different environments: campus clusters, distributed resources, and clouds.

Session details...

BIO:

Ewa Deelman is a Research Associate Professor at the University of Southern California (USC) Computer Science Department and a Research Director, at the USC Information Sciences Institute (ISI). Dr. Deelman's research interests include the design and exploration of collaborative, distributed scientific environments, with particular emphasis on automation of scientific workflow and management of computing resources, as well as the management of scientific data. Her work involves close collaboration with researchers from a wide spectrum of disciplines. At ISI she leads the Science Automation Technologies group that is responsible for the development of the Pegasus Workflow Management software. In 2007, Dr. Deelman edited *Workflows in e-Science: Scientific Workflows for Grids*, which was published by Springer. She is also the founder of the annual Workshop on Workflows in Support of Large-Scale Science, which is held in conjunction with the Super Computing conference. In 1997, Dr. Deelman received her Ph.D. in Computer Science from the Rensselaer Polytechnic Institute.

SUMMARY:

Topic: Advancing Computational Productivity Through Automation

Speaker: Ewa Deelman, Ph.D.

Date: Wednesday, May 25, 2016

Time: 11 AM – 12 PM ET

You are invited to listen to Dr. Deelman's presentation in Room 2W908 in the NCI Shady Grove Building on Medical Center Drive or via WebEx.

Presentation: A screen cast of the presentation will be available for viewing after the event on the NCI CBIIT Speaker Series YouTube Playlist

About the NCI CBIIT Speaker Series:

The National Cancer Institute (NCI) Center for Biomedical Informatics and Information Technology (CBIIT) Speaker Series is a bi-weekly knowledge-sharing forum featuring both internal and external speakers on topics of interest to the biomedical informatics and research communities. For additional information, including past speaker series presentations, visit the CBIIT Speaker Series page.

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