MURPA Seminar Friday 12 August 2011 at 9am: On Workflow-Driven Science and the Provenance of Related Products

Venue: Seminar Room 135, Building 26, Monash Clayton

Presenter: Dr Ilkay Altintas, Director for the Scientific Workflow Automation Technologies Lab at the San Diego Supercomputer Center (SDSC)

ABSTRACT:

Scientific workflow systems promote scientific discovery by supporting the scientific workflow design and execution. They can be instrumented to capture provenance (execution history) of workflows and related data. The provenance contains information about how products were derived, and is crucial for enabling scientists to easily understand, reproduce, and verify scientific results. Currently, most provenance systems are designed to capture and query provenance for a single workflow run mostly by a single user. However, a scientific discovery is often a result of methodical execution of many interrelated scientific workflows, where workflows and datasets published by one set of users are used by other users to perform subsequent analyses, leading to a new way of conducting scientific research, with potential implications on scientific collaboration concept. This presentation: (i) overviews scientific workflows with a focus on the open-source cross-disciplinary Kepler scientific workflow system; (ii) reviews provenance concept and models related to scientific workflow-driven research; and (iii) introduces our recent work on collaborative provenance to analyze dependencies across multiple workflow runs and user collaborations linked to these runs, which could be a basis for a MURPA student project.

SPEAKER BIO: Ilkay Altintas is the Director for the Scientific Workflow Automation Technologies Lab at the San Diego Supercomputer Center, UCSD where she also is the Deputy Coordinator for Research. She currently works on different aspects of scientific workflows in collaboration with various cross-disciplinary NSF, DOE and Moore Foundation projects. She is a co-initiator of and an active contributor to the open-source Kepler Scientific Workflow System, and the co-author of publications related to eScience at the intersection of scientific workflows, provenance, distributed computing, bioinformatics, networked observatory systems, conceptual data querying, and software modeling. Ilkay Altintas holds BS and MS degrees in Computer Engineering, both from Middle East Technical University in Turkey, and a PhD degree from FNWI, University of Amsterdam in The Netherlands. More

info at: http://users.sdsc.edu/~altintas/