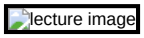

CCT Colloquium Series

A Comparison of Two Methods for Building Astronomical Image Mosaics on a Grid

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Johnston Hall 338
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Abstract:
This talk compares two methods for running an application composed of a set of modules on a grid. The set of modules (collectively called Montage) generates large astronomical image mosaics by composing multiple small images. The workflow that describes a particular run of Montage can be expressed as a directed acyclic graph (DAG), or as a short sequence of parallel (MPI) and sequential programs. In the first case, Pegasus can be used to run the workflow. In the second case, a short shell script that calls each program can be run. In this paper, we discuss the Montage modules, the workflow run for a sample job, and the two methods of actually running the workflow. We examine the run time for each method and compare the portions that differ between the two methods.

Speaker's Bio:
Daniel S. Katz is Assistant Director for Cyberinfrastructure Development (CyD) in the Center for Computation and Technology (CCT), and Associate Research Professor in the Department of Electrical and Computer Engineering at Louisiana State University (LSU). He is also a Faculty-Part-Time Principal at the Jet Propulsion Laboratory (JPL), California Institute of Technology. Previous roles at JPL, from 1996 to 2006, include: Principal Member of the Information Systems and Computer Science Staff, Supervisor of the Parallel Applications Technologies group, Area Program Manager of High End Computing in the Space Mission Information Technology Office, Applications Project Element Manager for the Remote Exploration and Experimentation (REE) Project, and Team Leader for MOD Tool (a tool for the integrated design of microwave and millimeter-wave instruments). From 1993 to 1996 he was employed by Cray Research (and later by Silicon Graphics) as a Computational Scientist on-site at JPL and Caltech, specializing in parallel implementation of computational electromagnetic algorithms. His research interests include: numerical methods, algorithms, and programming applied to supercomputing, parallel computing, cluster computing, and embedded computing; and fault-tolerant computing. He received his B.S., M.S., and Ph.D degrees in Electrical Engineering from Northwestern University, Evanston, Illinois, in 1988, 1990, and 1994, respectively. His work is documented in numerous book chapters, journal and conference publications, and NASA Tech Briefs. He is a senior member of the IEEE, designed and maintained (until 2001) the original website for the IEEE Antenna and Propagation Society, and serves on the IEEE Technical Committee on Parallel Processing's Executive Committee, and the steering committee for the IEEE Cluster and IEEE Grid conference series.

Refreshments will be served.

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