

CS Masters' Thesis Defense

Title: *Development of Json and Ajax enabled, database driven, user interfaces for science application portals*
Speaker: Hetang Shah
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Location: GMCS 405
Thesis advisor: Mary Thomas

Abstract:

Science application portals are used to provide a familiar Web based access to the general user community that allows them to run complex science simulations while encapsulating the details of what computing resources are required.

The SDSU Cyber infrastructure Web Application Framework (CyberWeb) simplifies the utilization of heterogeneous, computational environments required by high-performance computing applications. CyberWeb has three core components: (1) an Advanced user interface based on the Pylons Web 2.0 WSGI application framework that uses relational databases, XML, JavaScript, AJAX, Google Gadgets, social networks, and security; (2) a Dynamic database, with admin Web pages, for configuring CyberWeb installations, applications, users, remote resources and services; and (3) The job distribution Web service framework (Jodis) for task execution and management.

The objective of this research project is to develop python based tools for the following layers in the CyberWeb project:

1. Develop a CSS, Json and Ajax enabled architecture for the user interface that will minimize server calls and give better performance for the user experience.
2. Design an advanced admin module, which provides a generalized interface to the database, with access control based on user roles that will customize the data used by the CyberWeb system.
3. Provide a test harness for the system.
4. Integrate these tools into a CyberWeb Demo Portal.