

Senior Project Proposal

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Problem Statement

The CalPoly campus hosts hundreds if not thousands of events throughout the year. There are large events such as Open House or Week of Welcome, and there are smaller events organized by departments, clubs, and other groups. People learn of these events through word of mouth, paper literature, and online sources (Portal, ASI Events, events.calpoly.edu, Mustang Daily Online, etc.)

The problem is that none of the current announcement mediums communicates information about all of the events effectively. Word of mouth is limited to the connectedness of your acquaintances. Paper literature is hard to manage and just highlights the events popular to the majority and not minority interests within the community. The current online applications are poorly designed to handle the number of events we are considering. Poor presentation and design in these applications have prevented them from gaining popularity within the community.

If we wish to be more ambitious we should consider the problem of storing a historical archive of events. Many people would find it useful to look over the events in the past in order to see what happened within the community. Especially if the archive included video, pictures, and community feedback. I imagine only large or official events have historical archives at the moment, and that little of it is available publicly online.

Another issue related to event announcements is a political one. The current announcements systems are limited in their announcement capacity, and as a result they have gate keepers. In order to achieve a rich database of events the system will need many event posters. This will require moderation and permissions administration tools. Determining who can post events and how these privileges are administered will be an important topic of discussion with the stakeholders. For example, can club presidents post events, do these events need to be approved? There are also issues of how you signify an official event or events that you want to be more prominent.

Another political issue is the consolidation of event systems. We will need to convince stakeholders in Resource 25 and ASI Events to use the new system. We will also need to educate people on the use and administration of the new system. There is also the problem of integrating with these other applications if necessary. For example, Resource 25 manages resource allocation and reservation, something out of scope with this project.

Project Components

The solution will take the form of a Web Application hosted by CalPoly. There will also be additional interfaces to the data such as RSS feeds and portlets within the portal that display official events and events tailored to the authenticated user.

Behind the scenes will be a database with a number of different information structures. The primary object will be an event, which will have attributes such as a summary, description, dates, etc. An event will also have metadata associated with it. The exact form of this data will need to be developed, but as an example, we would want to be able to filter on the publisher of an event, the type of event, and categorical tags, such as biology or engineering. This rich database will allow users to view events in

ways they never could previously. For example, they might choose to view:

- Speaking events on Biology
- Engineering clubs event's
- Plays at the PAC
- Musical performances on campus

If time permits or in later releases, we may develop more advanced features, such as uploading photos/videos, comments, RSVP, etc.

Schedule

Initial proposals and communication with stake holders will begin in May 2009. By Summer I hope to have a set of requirements that satisfy all the stakeholders and a fairly detailed design. I will work with Dr. Dekhtyar to design the database and consider appropriate data mining algorithms and applications.

I will begin coding in the summer. As an ITS employee at CalPoly, I will be able to work on this project officially and dedicate the majority of my time to it. At some point we will have an initial release that will need to be tested by interested parties. Once everyone is satisfied, we will rollout to production. This may happen as soon as Fall 2009 but more realistically will not happen until Winter 2010.

Meeting the Requirements

Independence

I will be the main developer and designer of this project throughout its development. I may collaborate with my co-workers and Dr. Dekhtyar on design and technical issues, but the coding will all be done by myself.

Ownership

I will be developing this application both as a student working on their Senior Project and as a CalPoly ITS employee, developing an application for users. My aim is to develop a high-quality application that will be useful to other campuses and possibly other types of communities. In my opinion, the best way to accomplish this is to release the project under an open source license and host it on a website with tools that to promote its evolution and development. (e.g. JA-SIG or SourceForge)

Background Research

Some of the research for the project will involve talking to people and gathering their ideas and comments. I will also be examining various news web sites, such as Digg, JIRA, Slashdot, Facebook, uPortal, etc. By looking at these site's designs and comparing their features and user interfaces I will be able to develop a better events system for the campus. The more technical research for this project will involve looking at Knowledge Discovery from Data algorithms and determining which ones are applicable to the project.

Creativity

This project has a lot of opportunity for creativity. The user-interface, application of KDD algorithms, database design, and other aspects are all creative processes. There is a lot of detail and creative work in the little things. For example: how do you create an event filtering user interface that is intuitive and easy to use while allowing the user to access filter controls involving dozens of attributes and conditions. This project contains many design decisions like this one that will allow me to implement some creative ideas.