

Collaborative Management of Talks

Independent Study Report 2013 summer

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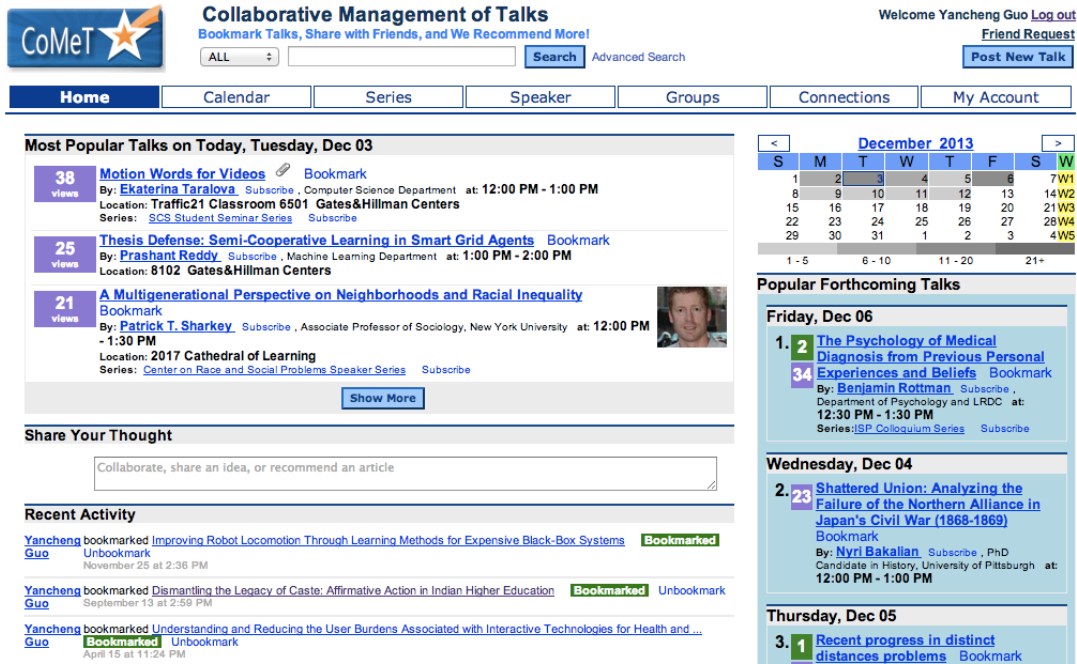
Chirayu Wongchokprasitti

Goals for Independent Study

1. On current calendar, talks can only be filtered by research area. We plan to add more types of filter to the website, including location, speaker, sponsor or other useful key words.
2. Use hierarchical representation to show talks classified in sponsors.
3. Create location category by retrieving key words from current location data.
4. Add short cut to bookmarked talks.
5. Add short cut to posted talks.

Introduction to CoMeT

Collaborative Management of Talks (CoMeT) is a website that collects technique talks held in Pittsburgh and provides related information to both students and faculties.



Picture 1: CoMeT main page

CoMeT provides most updated and comprehensive information. Generally, the website collects talks in time order, and uses a calendar for users to view talks within a selected time period. For each talk, it covers information like title, speakers, holder, time, location and a brief introduction to content. Besides, it also provides information like classification, sponsors, groups of interested users and most importantly, bookmark function. Therefore, it is not only a simple website that provides talk information, but a website that enables users to interact with both the website itself and other users.

By creating accounts, users can bookmark recent talks that they are interested to and the website could help them keep in mind the time and location of these talks. Besides this, the website also collects speakers' information, including their existing talks and future talks. Users can choose to subscribe a certain speaker to receive information about updated information. Moreover, this website also provides a platform for users to connect to each other and share their ideas and thoughts together.

Development Environment and techniques

1. JSP and Struts Framework
2. MYSQL
3. JQuery
4. AJAX
5. OpenCalais

Delivery: <http://halley.exp.sis.pitt.edu/comet.new.facet/calendar.do>

Design and Implementation

Currently, all the talks are listed in time order. The website provides a calendar on right side bar to enable viewing talks in a specific time period. To be more specific, users have three options to select a certain time period, view by day, by week or by month. Besides this, the website also provides filter function to filter out unwanted talks. To implement this function, the website include a “Research Area” block below the calendar. This block classifies talks into multiple research areas, and shows a total number of talks in each area. When user click on one of those summarized research areas, the talk list will only include talks within the selected area. Therefore, it is more convenient for users to find interested talks. As we can see, such filter function is quite useful and straightforward for users to use. However, on current website we only provide one filter choice, which is the research area. Because of this, we definitely need to add more filtering choices.

Week 1 of December: 1 - December 7, 2013

Monday, Dec 02

- 40 views** [Thesis Defense: Extending Active Learning for Improved Long-term Return on Investment of Learning Systems](#) [Bookmark](#)
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- 1 bookmark** [Spectral Estimation of Hidden Markov Models](#) [Bookmark](#)
By: [Jordan Rodu](#) [Subscribe](#), University of Pennsylvania at: 4:00 PM - 5:00 PM
Location: [Doherty Hall 1212](#)
Posted to groups: [Intelligent Systems Program](#) [Machine Learning Group](#)
Bookmarked by: [M. H. Falakmar](#)
Series: [Carnegie Mellon Statistics Seminar](#) [Subscribe](#)

Interest Areas

- Arts and Humanities (2)
- Biological Sciences (2)
- Computer & Information Science & Engineering (7)
- Education (2)
- Engineering (3)
- General Interests (3)
- Health Sciences (3)
- Mathematical & Physical Sciences (5)
- Social, Behavioral & Economic Sciences (10)
- Unclassified (15)

Picture 2: Calendar page

Adding Filter Choices

Adding more filtering choices means classifying talks into more categories. To choose valid categories, we first considered series and groups. This is because we have already classified talks into these two categories, but using two separate pages to contain series and groups information. Currently, we have independent pages to show series and groups list, and for each of them, we list all talks without letting users choose from certain time period. Therefore, we first added two more filter choices for series and groups. Besides these two, we also considered other useful field of information. Some other choices we considered include sponsors, speakers, locations and hosts. Finally, we decided to add six more filter choices, covered all above discussed fields.

Research Areas
Computer & Information Science & Engineering (1)
Engineering (1)
Mathematical & Physical Sciences (1)
Unclassified (1)
Sponsor
Carnegie Mellon University (2)
Host
Unknown (2)
groups
E-Learning (1)
PAWS Group (1)
N/A (1)
series
Field Robotics Center Seminar (1)
N/A (1)
Location
Unknown (2)
speakers
José Gonzalez (1)
Martin Wüstefeld (1)

Picture 3: Newly added side bar

To maintain consistency, we used a same table pattern for all filter terms. This modified table of filter terms is added to side bar, replaced original filter table with only one term “Research Area”. As you can see above, talks in a given time period are grouped by different common terms. The filter table here shows the name of these terms and a number of talks that are included. If a talk fails in classification, we would also provide a term of either “unclassified” or “N/A” to contain it.

Filtering with Multiple Terms

If a user click on one of the terms in filter table, the talk list would filter out all other non-related talks. Besides, at the top of talk list, there would be a notification of chosen filter term, so that user would be able to disable a filter term as they wish. However, since we currently classify talks based on seven different categories, therefore, the filtering results guarantee that filter terms across categories work fine with each other. As you can see on following picture, when we select a certain research area and a sponsor, the talk list would only contain talks fits requirement of both filter terms. Through this function, users can choose to filter out talks from different aspects, and would be more likely to find out useful information.

To disable a filter term, users only need to click on the ✕ after each term. The design is that each time when users choose to disable one filter term, the talk list would refresh with all existing valid filter terms. So that disabling a filter term

would not affect other terms from functioning.

Research Area: [Computer & Information Science & Engineering](#)

Sponsors: [Carnegie Mellon University](#)

Date: August 2, 2013

Friday, Aug 02

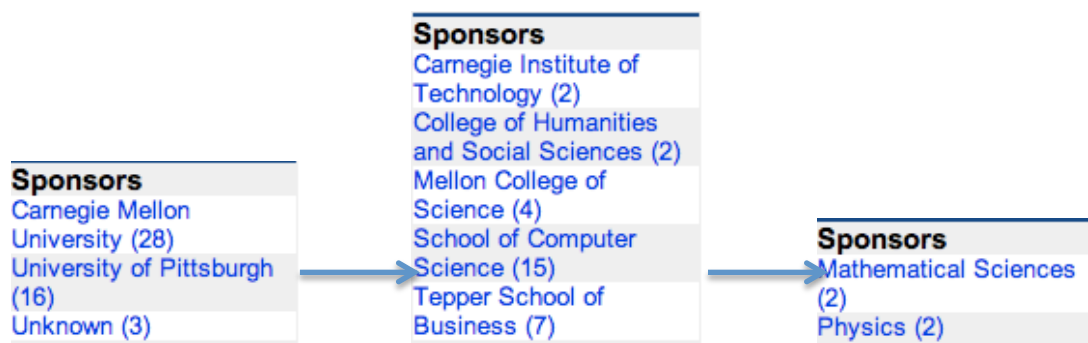
22 views	3D Measurement and Man-Machine Cooperation Bookmark
By: Martin Wüstefeld Subscribe , Head of System Technology and ,Safety Management , ,SICK AG at: 12:30 PM - 1:30 PM	
Location: 2109 Gates and Hillman Centers	
Series: Field Robotics Center Seminar Subscribe	

Picture 4: Filter term display

It is also mentionable that the filter table would refresh along with the talk list. Basically, the filter table is synchronized with the talk list, meaning that it only considers talks within current talk list. So that if a user click on a filter term, the talk list would contain only talks related to the chosen term and thus filter table would be updated because talks in talk list is reduced. As mentioned above, we enabled filter terms to work together in order to filter out talks from different aspects. Similarly, we have the filter table updated all the time to narrow the number of talks remaining.

Hierarchical Representation of Sponsors

To meet requirements of using hierarchical representation for sponsor information, and to consider consistency at the same time, we decided to use a different way to implement hierarchical relationship. As mentioned above, the filter table would update every time when a filter term is added. Therefore, we designed category of sponsors into three levels. For instance, at very beginning, talks are grouped in university level, after a user chosen a certain university, the filter table would refresh to show common terms of talks within chosen university but grouped in school or college level. Finally, if a talk is chosen in a certain college, we then update the filter table and groups in the lowest level.



Picture 4: Hierarchical representation of sponsors

When users reach the lowest level of sponsors, there would likely to exist three functioning filter terms. For instance, as shown below, if a user chooses “Carnegie Mellon University”, and then “Mellon College of Science” and then “Mathematical Science”, all these terms would be listed above talk list. To disable these terms, users could choose which level of terms they would like to disable and the result would go to a higher level. This means that if a user disables term “Carnegie Mellon University”, the term “Mellon College of Science” and “Mathematical Science” in lower level will be disabled together so that results would be consistent and avoid lower level terms functioning along without higher level terms.

Sponsors: [Carnegie Mellon University](#)

Sponsors: [Mathematical Sciences](#)

Sponsors: [Mellon College of Science](#)

Week 1 of December: 1 - December 7, 2013

Wednesday, Dec 04

5 views [The Quality Dimension of Value Investing](#) [Bookmark](#)
 By: [Robert Novy-Marx](#) [Subscribe](#), University of Rochester at: **3:30 PM - 5:00 PM**
 Location: **Tepper/GSIA Faculty Conference Room 322**
 Series: [Center for Computational Finance Seminar](#) [Subscribe](#)

Thursday, Dec 05

2 views [On some properties of mean field spin glasses](#) [Bookmark](#)
 By: [Antonio Auffinger](#) [Subscribe](#), University of Chicago at: **10:30 AM - 11:30 AM**
 Location: **WeH 8220**
 Series: [Center for Computational Finance Seminar](#) [Subscribe](#)

Picture 5: Filter terms list of sponsors

Create Location Category

In current database, location information is stored as a single property for each data item. However, in order to classify talks into different common places, we would need to extract information from location property and group by these common terms. The way of implementing this function is that we had to create a new table storing common places of talks, and use a relation table to link talk items with common place items. This work should not be done in runtime, which would cause huge operational delay, so we built up a program that went through all talks data in database, retrieved useful information from location property and inserted category data into newly added tables. This was done using a web service called “OpenCalais”. The workflow of this program was shown bellow:



Step 1: Local program retrieves location string from database (e.g. Room 501 of the Information Science Building, 135 North Bellefield Avenue).

Step 2: Local program calls OpenCalais to extract useful information from this string (e.g. Information Science Building) as a common term of place.

Step 3: Local program check to see if extracted common term exists in database, if so, only store the relationship between the talk and common term, if not, first stores the common term and then stores the relationship between the talk and the common term.

After building up a category table, we were able to classify talks into locations in the same way of other categories.

Enable Short Cuts to Bookmarks and Posted Talks

Besides more filter choices, we also considered two other useful functions, bookmark and post talk. Currently, to check bookmarked talks, users have to go through My Account page, and click on bookmark button that linked to an independent page to show bookmarked talks. To reduce operational burden, we added a link on sidebar to select all bookmarked talks. Similarly, on current page, we have to go through the same process to find posted talks. So we also add a link to select all posted talks in the same way.



Picture 6: Bookmarks and posted talks

The implementation of these two functions followed the same pattern of other filtering categories. In fact, these two terms were also included in filter table. The difference is that the number here shows the total number of talks a user has bookmarked or posted, and these two terms will not disappear even if the number is 0.

Future Work

In next step of improvement, we should first consider to reduce operational delay. Since we are using a relational database and usually involves multiple database tables in one operation, the operation time of running SQL query brings significant burden that affecting the performance of our website. I would suggest we consider more preprocessing process to reduce the amount of logic calculation in runtime, or trying to use another type of database with higher speed in retrieving data.

Besides, we would need to consider the implementation of calendar in side bar. Currently, although we enabled use of viewing by day, by week and by month, these functions are not straightforward for users to use. One example is that user cannot choose to go to a certain month directly. In fact, the only choice we provide is to let them go forward or backward one month a time. Because we are suffering an operational delay, this kind of design would definitely annoy our uses, and we definitely need to improve that.