

CV Case Studies

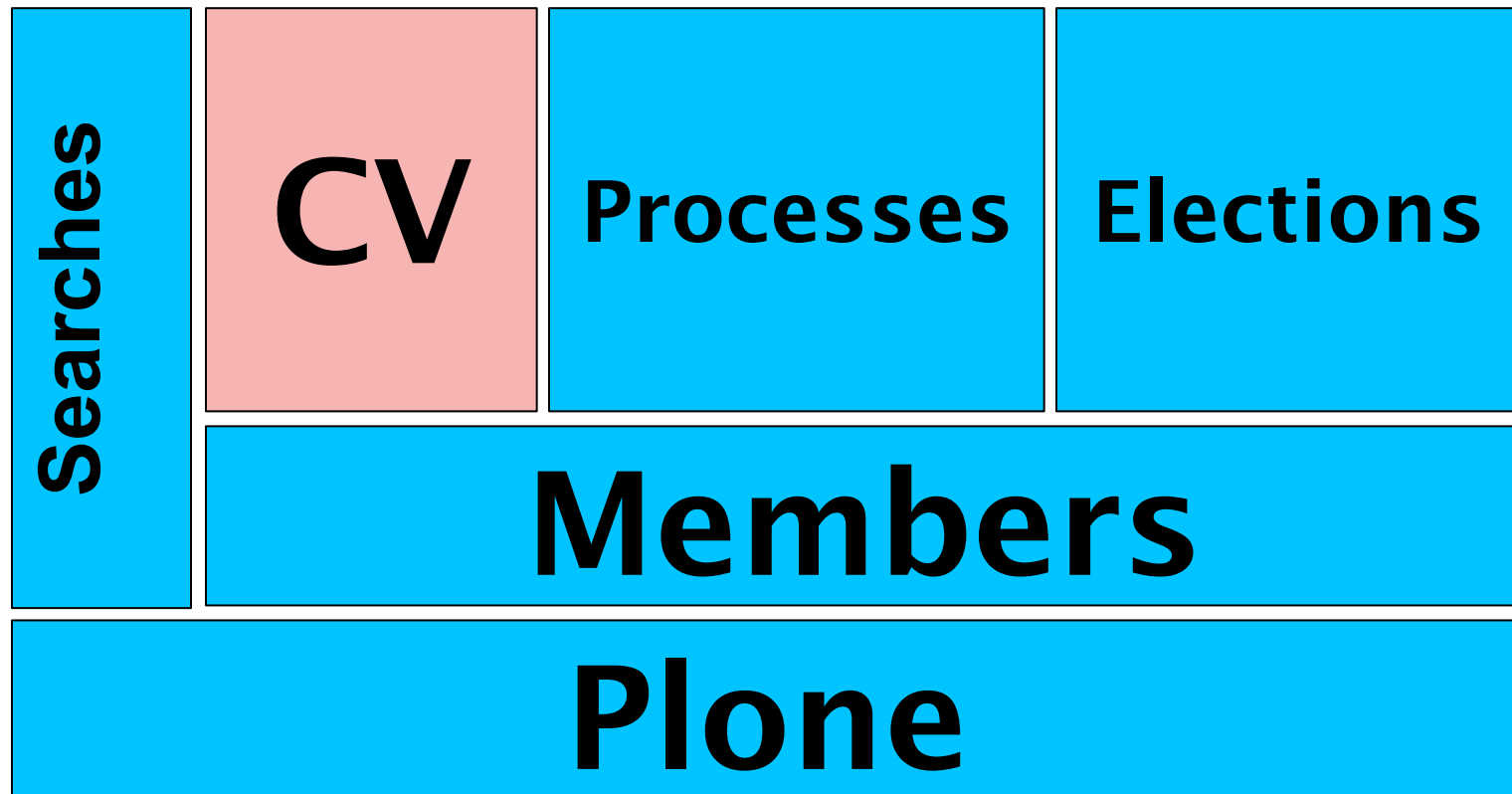
Vladímir Meléndez

Joint work with:

Sergio Rajsbaum, Marco A. López

Institute of Mathematics, UNAM
Computer Engineer Master Program, UNAM

Institute of Mathematics,



Talk Overview

→ Origins & Background

Actual situation

Improvements required

Challenges & Conclusions

Individual Reports

- ▶ UNAM Institute 's members make several individual reports each year of academic



Several individual reports..

- ▶ Each requires specific information:
 - Annual reports
 - Economic incentive reports
 - CONACYT report (Mexican equivalent to NSF)
- ▶ Must submit when institution requires

And global reports

- ▶ The chairman produces a yearly report:
 - Including all individual reports
 - With statistics, graphs, etc.
 - And historical information
- ▶ Other global reports/queries needed yearly

In the beginning....

- ▶ Individual reports by hand! ...or word processor
- ▶ Institute annual report requires a long compilation work
- ▶ users needs to enter ALL the information... each year, several times, in addition to maintaining their own CV's!!

Reported activities

About 30 academic activities

- Publications (articles, book chapters, books)
- Total citations by year
- Teaching (courses, tutor, thesis advisor)
- Projects

more...

...and more activities

- committee participations, etc
- Visits, researchers invited
- Academic awards, invited talks
- ...

Many items are related to a project sponsored by other institutions (e.g. NSF)

Talk Overview

Origins & Background

→ **Actual situation**

Improvements required

Challenges & Conclusions

A first CV system

Characteristics

- ▶ Plone 2.1
- ▶ Each academic item becomes CV item: a Plone content type
- ▶ 30 CV items
- ▶ Each academic item has 4–30 fields
- ▶ A CV container for every user

Example of article item:

Conditions on input vectors for consensus solvability in asynchronous distributed systems



Authors:

Achour Mostefaoui, Sergio Rajsbaum y Michel Raynal

Status of article:

Published

Submission date:

11/01/2002

Date accepted:

19/07/2003

Publication date:

01/11/2003

Subject index:

68-xx Ciencias de la computación

Submission date, accepted date, publication date

... article item: fields 8-15

Abbreviated name of the journal:

JACM

Full name of the journal:

Journal of the ACM

ISSN:

0004-5411

MRNUMBER:

MRCLASS:

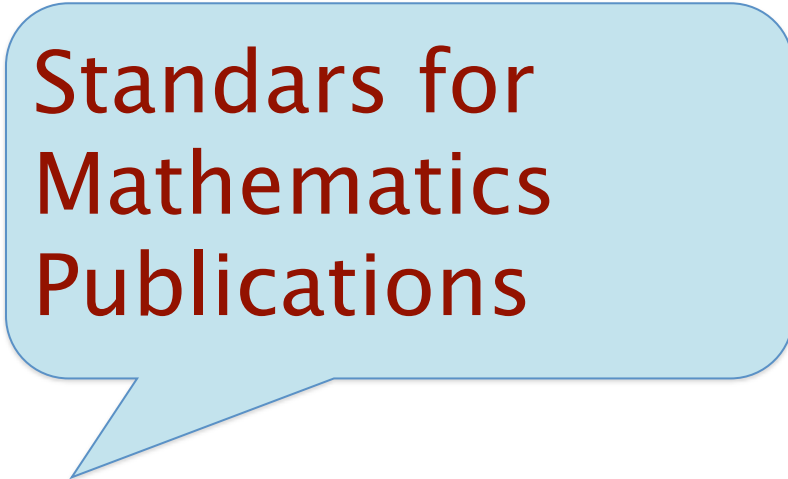
MRREVIEWER:

CODEN:

Publisher:

ACM

Address:



Standars for
Mathematics
Publications

..article item: fields 16-25

Epoch:

Volume:

50

Number:

6

Pages:

922--954

URL:

<http://doi.acm.org/10.1145/950620.950624>

Notes:

Comments:

Refereed article:

Yes

Article:

Scientific

Related projects:

... article item: field 26 ...

Abstract:

This article introduces and explores the condition-based approach to solve the consensus problem in asynchronous systems. The approach studies conditions that identify sets of input vectors for which it is possible to solve consensus despite the occurrence of up to f process crashes. The first main result defines acceptable conditions and shows that these are exactly the conditions for which a consensus protocol exists. Two examples of realistic acceptable conditions are presented, and proved to be maximal, in the sense that they cannot be extended and remain acceptable. The second main result is a generic consensus shared-memory protocol for any acceptable condition. The protocol always guarantees agreement and validity, and terminates (at least) when the inputs satisfy the condition with which the protocol has been instantiated, or when there are no crashes. An efficient version of the protocol is then designed for the message passing model that works when $f < n/2$, and it is shown that no such protocol exists when $f \geq n/2$. It is also shown how the protocol's safety can be traded for its liveness.

... article item: fields 27-

Indexed article:

True

National or international journal:

International

We will discuss more about later

BibTeX format

```
@article{MR2146255,  
author = {Achour Mostefaoui and Sergio Rajsbaum and Michel Raynal},  
title = {Conditions on input vectors for consensus solvability in asynchronous  
distributed systems},  
journal = {JACM},  
year = {2003},  
volume = {50},  
fjournal = {Journal of the ACM},  
publisher = {ACM},  
number = {6},  
pages = {922--954},  
month = {11},  
abstract = {This article introduces and explores the condition-based approach to solve  
the consensus problem in asynchronous systems. The approach studies conditions
```

A form to enter data...fields


Short name

Should not contain spaces, underscores or mixed case. Short Name is part of the item's web address.

Authors

Name of authors

Nombre(s)	Apellidos	Página web
<input type="text"/>	<input type="text"/>	<input type="text"/>

 more

Title

Status of article

Select status of the article

A form to enter data...fields

Submission date

Date of article submission. There is no need to fill in the 3 fields. Only if the field is mandatory (indicated by an asterisk) should you fill in the year.

Date accepted

Date article accepted. There is no need to fill in the 2 fields.

Publication date

There is no need to fill in the 2 fields.

Subject index

For more information about the classification please go to the  [ams](#) website.

- 00-xx General
- 01-xx Historia y biografia
- 03-xx Logica matematica y fundamentos

International standards:
American Mathematical
Society subject classification

A form to enter data...fields

Abbreviated name of the journal

Full name of the journal

ISSN

MRNUMBER

MRCLASS

**More International
standards**

A form to enter data...fields

Publisher

Address

Publisher address

Epoch

Volume

Number

Journal or TR number

A form to enter data...fields

Pages

A page range of the form '42--111'; also several separated by commas '7,41,73--97' can be used.

URL

URL of the referenced resource

Notes

Additional notes. It will appear in your BibTex bibliography

Comments

These fields will not appear in your BibTex bibliography

A form to enter data...fields

Refereed article ■

Select in case the article has

Article ■

Scientific

General public

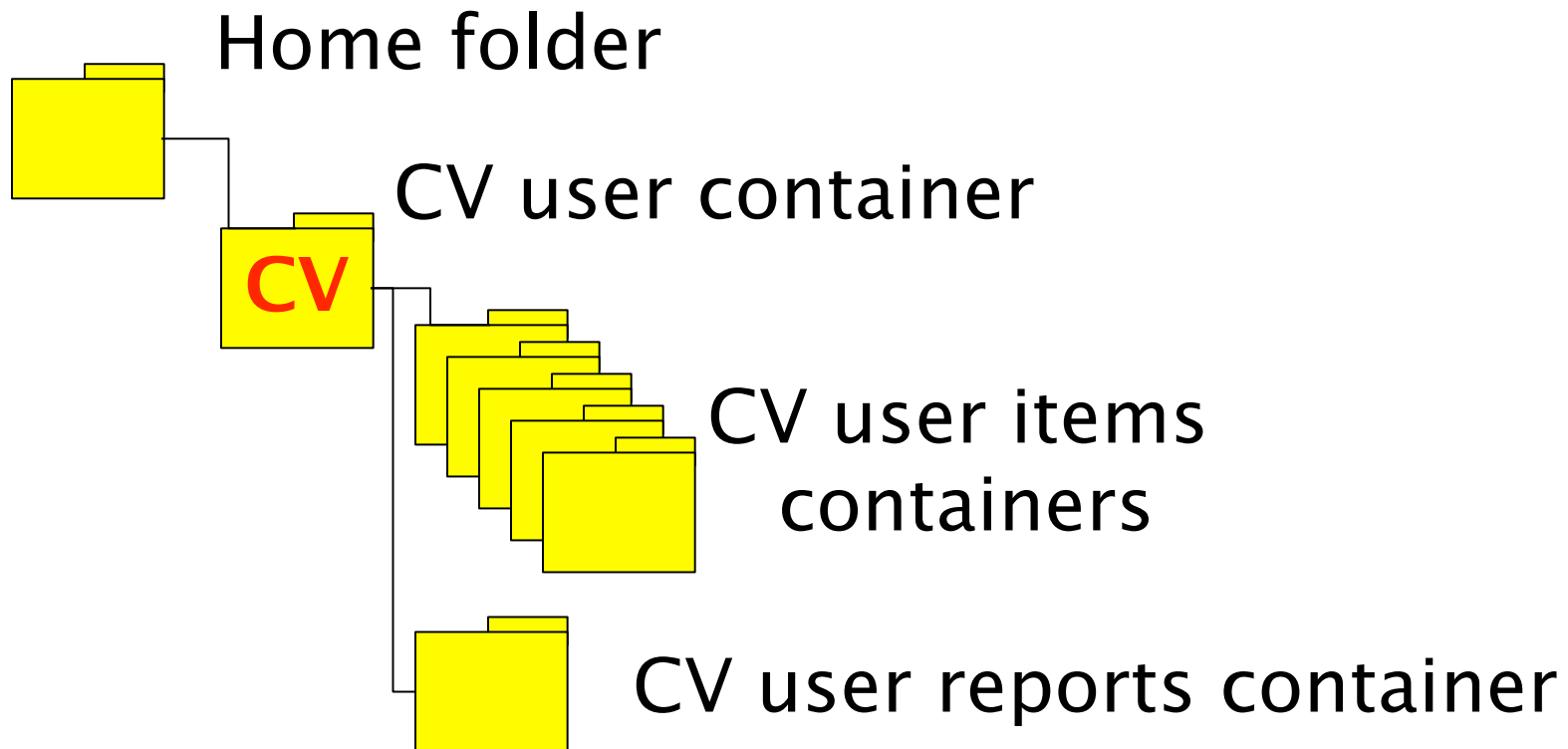
Related projects

Abstract

Type here an abstract of the work (it will be exported as the Abstract field)

New fields are often required to report statistics for UNAM admin

User's point of view



Projects

- ▶ Initially, users had their own projects folder
- ▶ BUT
 - Many users work in the same project
 - Result = Duplicated information!
- ▶ SOLUTION: A special container for projects, administered by assistant staff

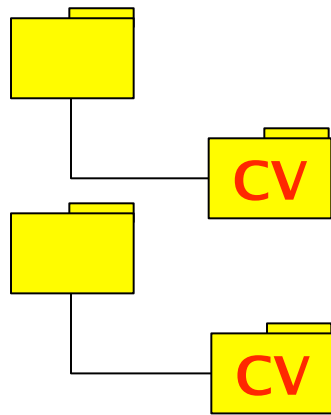
Central project container

- One repository for projects
- Users only add references
- Project data administered by assistant staff- becomes official

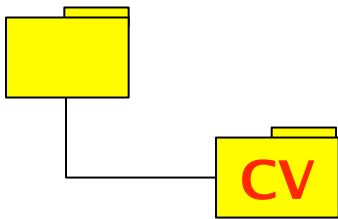
CV system architecture

General architecture

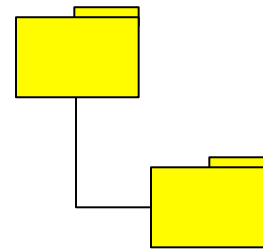
User's Home folder



... CV user container

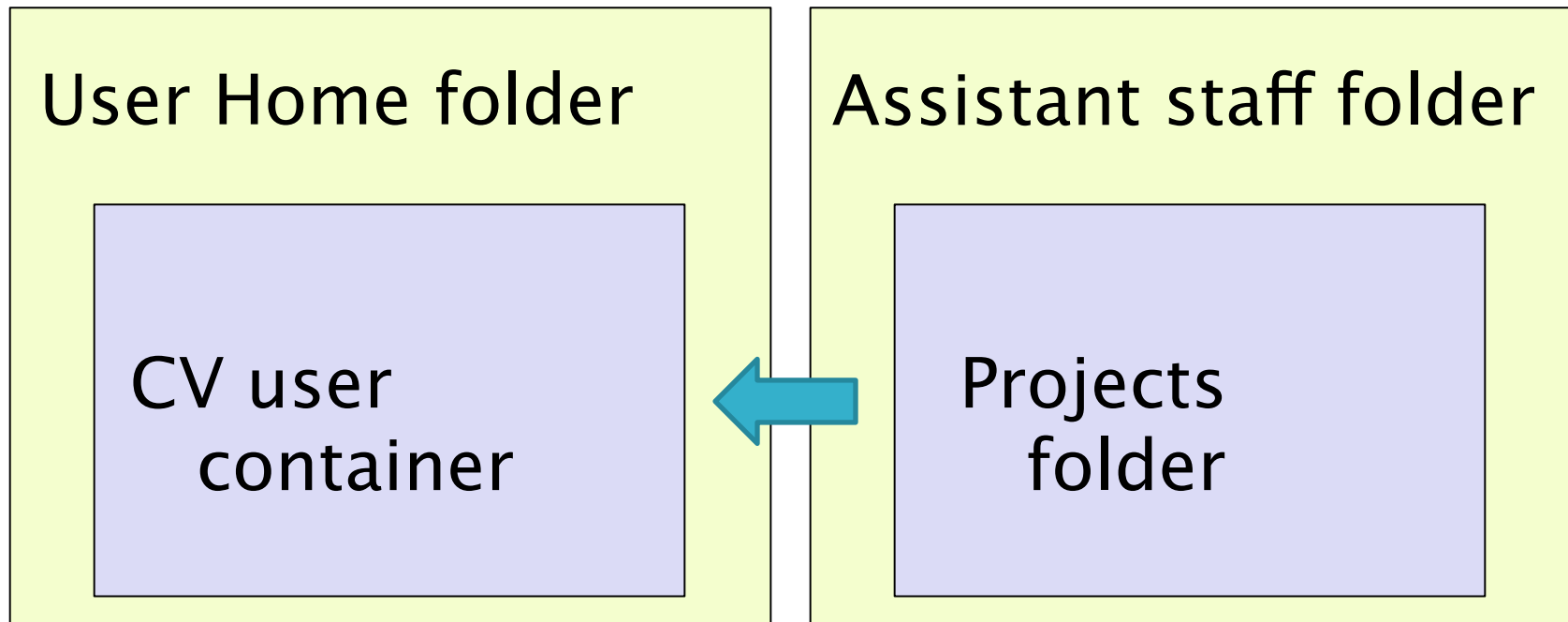


Assistant staff folder



Projects folder

Block architecture



CV system features

Adding CV items

- Users have their own main container, and 30 sub-containers for every CV item type

Creating CV Reports

- Users have a special container that allows them to create reports: with date filter and options to exclude undesired items

Submitting a Report

- Any moment a user can select “create report”, then:
- Specifies type of report – just a label identifying to what committee it goes
- Specifies initial and final dates
- A snapshot of the CV’s activities within the date range is copied to an admin folder

Report properties

- The user can see the submitted report
- Cannot modify it
- Admin can see the report,
- Can compute global statistics over users and past reports
- While the user can keep on modifying his CV
- Goal: do not capture CV data one day before deadline!

Projects: General repository

Proyectos (342)



Patrocinador: Conacyt (65)



 [**Algebras y Espacios Vectoriales Topológicos**](#) by [Hugo Arizmendi Peimbert](#) — last modified 2009-02-28 00:34

 [**Análisis Geométrico: Estructuras Distinguidas III**](#) by [Catherine Searle Burns](#) — last modified 2007-11-21 20:41

 [**Análisis Geométrico: Estructuras Distinguidas IV**](#) by [Catherine Searle Burns](#) — last modified 2007-11-21 20:41

 [**Anillos de Burnside**](#) by [Gerardo Raggi Cárdenas](#) — last modified 2007-11-21 20:40

 [**Aplicaciones Algebraicas y Conjuntistas a la Topología**](#) by [Gloria Colmenares V.](#) — last modified 2007-11-21 20:38

 [**Aplicaciones de Álgebra y Combinatoria a la Topología**](#) by [Gloria Colmenares V.](#) — last modified 2009-02-25 14:35

Projects: project detail

Análisis Geométrico: Estructuras Distinguidas III



by [Catherine Searie Burns](#) — last modified 2007-11-21 20:41

Internal responsible:

Ninguno

Colaboradores externos:

a. paterno▲	a. materno	nombre(s)	institución	país
Hernández	L.	L.	CI	
Bor		G.	CI	
Petean		I.	CI	
Sánchez	V.			

Alumnos:

a. paterno▲	a. materno	nombre(s)	institución	país
Guadarrama	B.		UNAM	

Every activity is tagged with AMS category– very useful for queries

Subject index:

53-xx Geometría diferencial

Interoperability

Interoperability: import

- A standard web database for Math is MathSciNet – most journals, can be exported to BibTex
- With a simple cut and paste, users upload “all” their publications to the system
- One or more in a single step – users love it

Interoperability: import

A few steps for import publication

secretaría académica | actividades | secretaría técnica | soporte | contingencia

Sergio Rajsbaum | my folder | p

rs → rajsbaum → mi curriculum → artículos

contents | view | edit

translate into | actions | add item | state: inicial

Artículos

by Sergio Rajsbaum — last modified 2006-11-21 14:04

- [Cycle-pancyclism in tournaments II](#) by Beatriz Caudillo González — last modified 2008-01-22 16:29
- [Optimal clock synchronization under different delay assumptions](#) by Beatriz Caudillo González — last modified 2008-01-22 16:31
- [Cycle-pancyclism in tournaments I](#) by Beatriz Caudillo González — last modified 2007-12-14 15:05
- [Upper and lower bounds for stochastic marked graphs](#) by Beatriz Caudillo González — last modified 2007-12-14 14:12
- [On the average performance of synchronized programs in distributed networks \(preliminary version\)](#) by Beatriz Caudillo González — last modified 2007-12-14 15:08

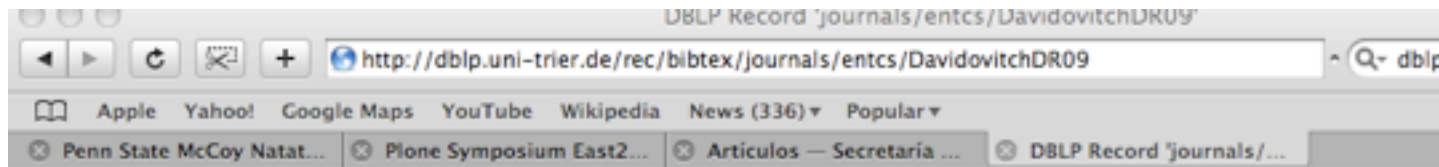
Interoperability: import

...shows import bibliographic entries

The screenshot shows a web application interface for importing bibliographic entries. At the top, there is a breadcrumb trail: "rs → rajsbaum → mi curriculum → artículos". Below this, there are three tabs: "contents", "view", and "edit". A green header bar contains the following elements: "translate into" (with a dropdown arrow), "actions" (with a dropdown arrow), "add item" (with a dropdown arrow), and "state: inicial". The main content area is titled "Import bibliographic entries" and includes a set of icons (print, refresh, search, etc.) and a language selection dropdown. Below the title, there is a text instruction: "Type the name of the source file or click the button **browse** to search for the file. Then, specify the format from the list. Finally click **importar**." There are two input fields: "Source to import" and "Source text". The "Source text" field has a placeholder instruction: "Paste the text to import here (make sure to use the right format according to the format you select)."

Interoperability: import

...search an article on database (DBPL for



DBLP Record 'journals/entcs/DavidovitchDR09'

BibTeX

```
@article{DBLP:journals/entcs/DavidovitchDR09,
  author   = {Lior Davidovitch and
             Shlomi Dolev and
             Sergio Rajtsbaum},
  title    = {Stability of Multi-Valued Continuous Consensus},
  journal  = {Electr. Notes Theor. Comput. Sci.},
  volume   = {230},
  year     = {2009},
  pages    = {23-38},
  ee       = {http://dx.doi.org/10.1016/j.entcs.2009.02.015},
  bibsource = {DBLP, http://dblp.uni-trier.de}
}
```

Interoperability: import

Just copy...

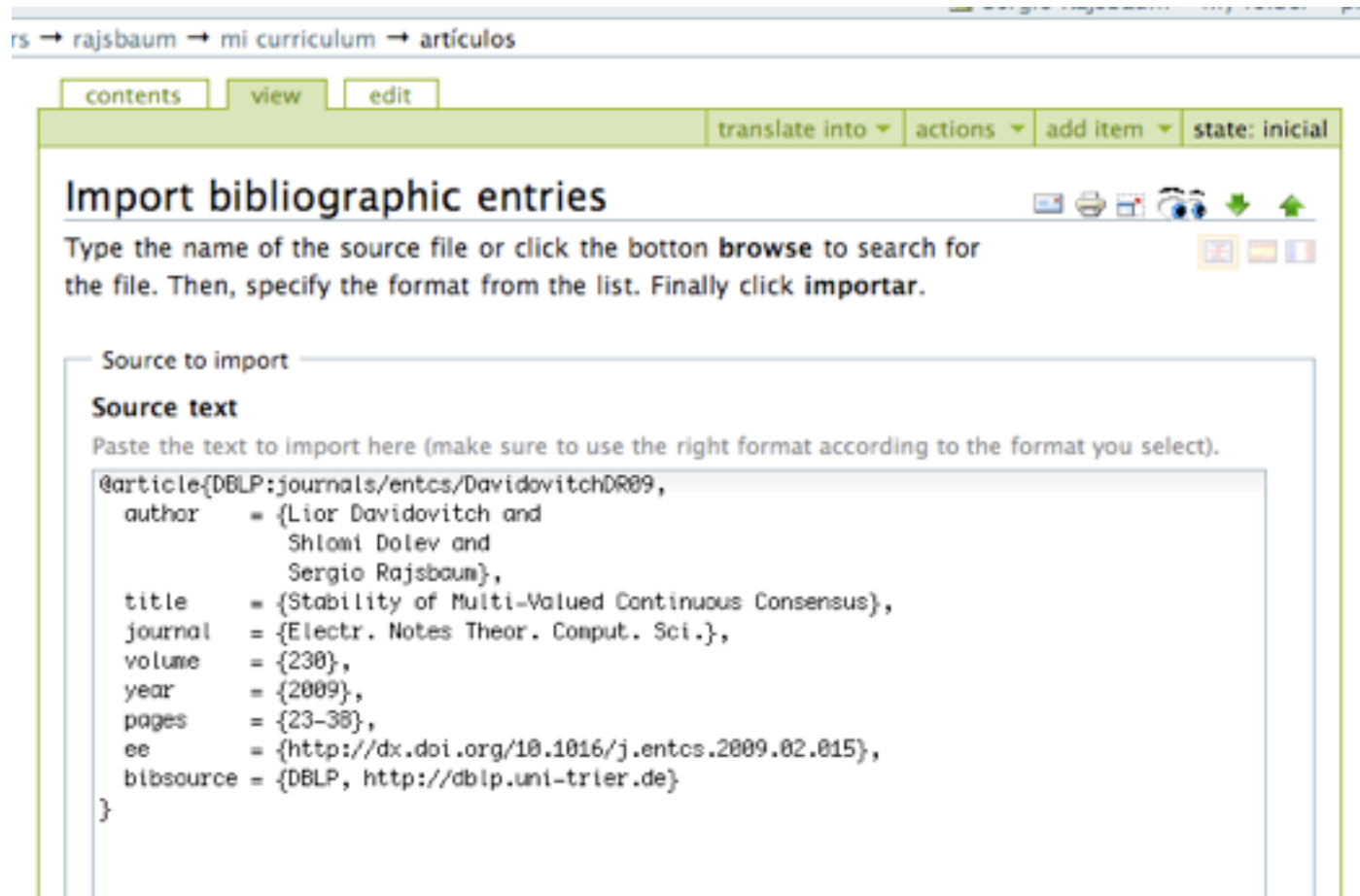
DBLP Record 'journals/entcs/DavidovitchDR09'

BibTeX

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@article{DBLP:journals/entcs/DavidovitchDR09,  
  author    = {Lior Davidovitch and  
              Shlomi Dolev and  
              Sergio Rajsbaum},  
  title     = {Stability of Multi-Valued Continuous Consensus},  
  journal   = {Electr. Notes Theor. Comput. Sci.},  
  volume    = {230},  
  year      = {2009},  
  pages     = {23-38},  
  ee        = {http://dx.doi.org/10.1016/j.entcs.2009.02.015},  
  bibsource = {DBLP, http://dblp.uni-trier.de}  
}
```

Interoperability: import

... paste



The screenshot shows a web browser window with the address bar displaying "rs → rajsbaum → mi curriculum → artículos". The page has a navigation bar with "contents", "view", and "edit" buttons. Below this is a green header with "translate into", "actions", "add item", and "state: inicial" options. The main content area is titled "Import bibliographic entries" and includes instructions: "Type the name of the source file or click the button browse to search for the file. Then, specify the format from the list. Finally click importar." Below the instructions is a text input field labeled "Source text" with the following content:

```
@article{DBLP:journals/entcs/DavidovitchDR09,  
  author    = {Lior Davidovitch and  
              Shlomi Dolev and  
              Sergio Rajsbaum},  
  title     = {Stability of Multi-Valued Continuous Consensus},  
  journal   = {Electr. Notes Theor. Comput. Sci.},  
  volume    = {238},  
  year      = {2009},  
  pages     = {23-38},  
  ee        = {http://dx.doi.org/10.1016/j.entcs.2009.02.015},  
  bibsource = {DBLP, http://dblp.uni-trier.de}  
}
```

Interoperability: import

... select right format

Source file
Select the file to import clicking Browse .

no file selected

Source format
Please select the source format.

BibTeX
 EndNote
 XML (MODS)

Interoperability: import

... and finally select article type!

s → rajsbaum → mi curriculum → artículos

The screenshot shows a web interface for managing bibliographic entries. At the top, there are navigation tabs for 'contents', 'view', and 'edit'. Below these are utility buttons: 'translate into', 'actions', 'add item', and 'state: inicial'. A yellow banner contains the text 'Validate bibliographic entries'. The main heading is 'Import bibliographic entries', followed by a paragraph explaining that the type of destination file can be selected for each entry. A specific entry is shown: '1 Item *Stability of Multi-Valued Continuous Consensus* will be exported as:'. Below this, a dropdown menu is set to 'Published, accepted or finished articles'. At the bottom of the entry box are 'accept' and 'cancel' buttons. On the right side of the interface, there are icons for email, print, refresh, zoom, and navigation.

Interoperability: export

- System can export to LaTeX
- Can choose subsets of CV activities to create a LaTeX CV in English/Spanish, short/long, for a date range.
- The user can manually edit the LaTeX

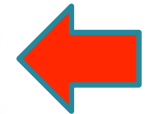
Interoperability: BibTEX

- Publication related items can be exported/imported to/from BibTEX format

Interoperability: BibTEX

Export bibliographic entries

Select the format from the list. Confirm clicking **export**.



Export

Export format

Please select a format

BibTeX

export

Export

exhibit

Interoperability: BibTEX

Export bibliographic entries

Select the format from the list. Confirm clicking **export**.



Export

Export format

Please select a format

BibTeX ▼

export

Export

exhibit

A large red arrow points from the left towards the 'BibTeX' dropdown menu in the 'Export format' section.

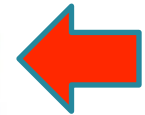
Interoperability: graphic

- With MIT Citeline system allows exhibit bibliographic information in a graphic friendly way
- <http://citeline.mit.edu/>
- In just one afternoon our system and MIT Citeline system can interoperate!

Interoperability: exhibit

Export bibliographic entries

Select the format from the list. Confirm clicking **export**.



Export

Export format

Please select a format

BibTeX ▼

export

Export

exhibit

Interoperability: exhibit

Export bibliographic entries



Select the format from the list. Confirm clicking **export**.

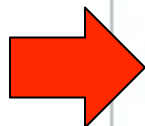
Export

Export format

Please select a format

BibTeX ▼

export



Export


exhibit

Interoperability: exhibit

61 Publications

sorted by: [pub-type](#); then by... • grouped as sorted

article (36)

 **pub-type**

- 36 article
- 7 incollection
- 15 inproceedings
- 3 unpublished

author

- 2 A, Juan Garay
- 1 Afek, Yehuda
- 2 Attie, Paul
- 2 Attiya, Hagit
- 1 Becker, Florent
- 1 Castañeda, Armando

year

- 1 1990
- 1 1991
- 2 1994
- 1 1995
- 1 1996

1. Introduction to the PODC 2003 Special Issue

[Rajsbaum, Sergio](#)

This special issue of Distributed Computing is based on papers that originally appeared, in preliminary and abbreviated form, in the Proceedings of the 22nd SIGACT-SIGOPS Symposium on Principles of Distributed Computing (PODC '03), held in Boston, Massachusetts, U.S.A., on July 13-16, 2003. The papers were chosen from the thirty-five full-length papers presented in the Symposium, based on their quality and representation of the range of topics addressed in the Symposium. In addition to being reviewed, in preliminary form, by the Program Committee of PODC '03, the papers selected for this special issue were subsequently refereed according to the standard practices of *Distributed Computing*.

2. The combined power of conditions and failure detectors to solve asynchronous set agreement

[Rajsbaum, Sergio](#), [Castro, Miguel](#), [González, Juan](#), [González, Juan](#), [González, Juan](#), [González, Juan](#), [González, Juan](#), [González, Juan](#), [González, Juan](#), [González, Juan](#), [González, Juan](#)

System on line... +2 years!

CV system results 😊

- ▶ Annual report of Institute:
 - 3 years with updated information,
 - Very flexible queries, including historical data
 - And online: can generate graphs on the fly “give me a bar chart of women vs math topics from 2000 to 2005”

CV system results ☹️

- ▶ **Slow!**
 - Especially with high concurrence before deadlines
- ▶ **User interface**
 - Not flexible to different needs or styles
 - Granularity is fixed and not always optimal
- ▶ **Redundant Information**

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Actual situation

→ **Improvements required**

Challenges & Conclusions

Priority requirement

- ▶ Performance: improve user experience, faster
- ▶ Better user interface
- ▶ Help user type less (admin assistant, redundant or web data)

New requirements

Import information from Web

- ▶ Publications : A lot is available through the web (on line DB's), then update CV system with this info!

Subforms

- ▶ Citations: the system considers several citations from a publication.
- ▶ It should allow to add citations through publication edit form => subforms

Interoperability with colleagues

- ▶ Interoperability with other university departments: official course data is available at the undergraduate school; update CV system with this info!

Interoperability with processes

- ▶ Interoperability with internal process: Trips are formally approved by the Department, include data automatically in the CV.

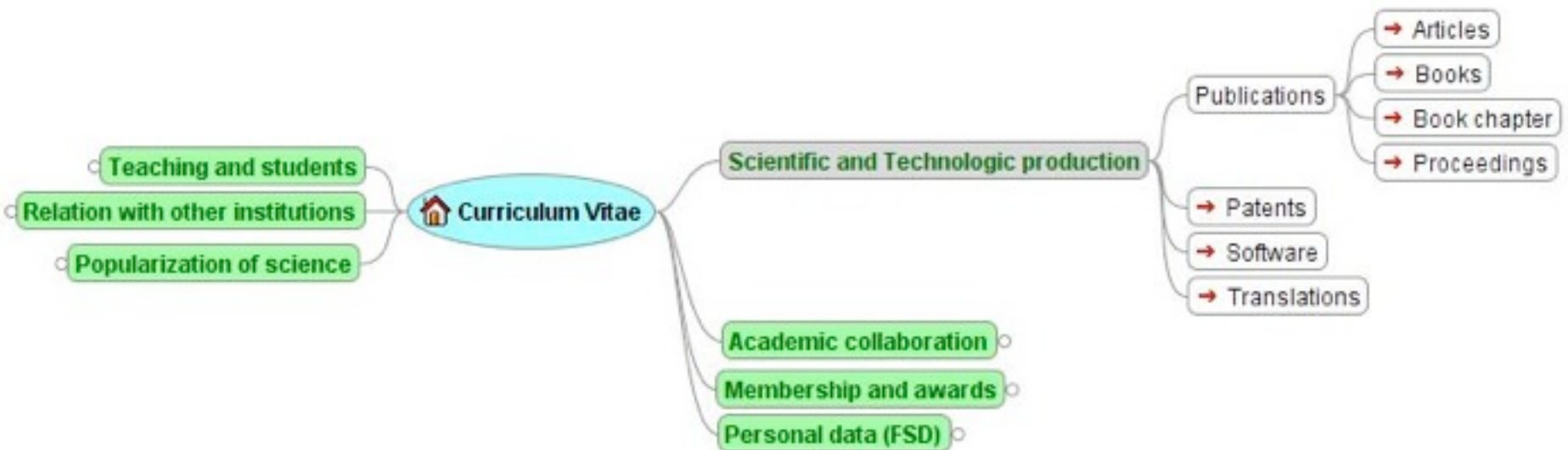
Avoid duplicated information

- ▶ Avoid duplicate information: CV items with more than 1 user involved, must have only one entry in the system.
 - Papers, organized conferences, theses advised, etc.

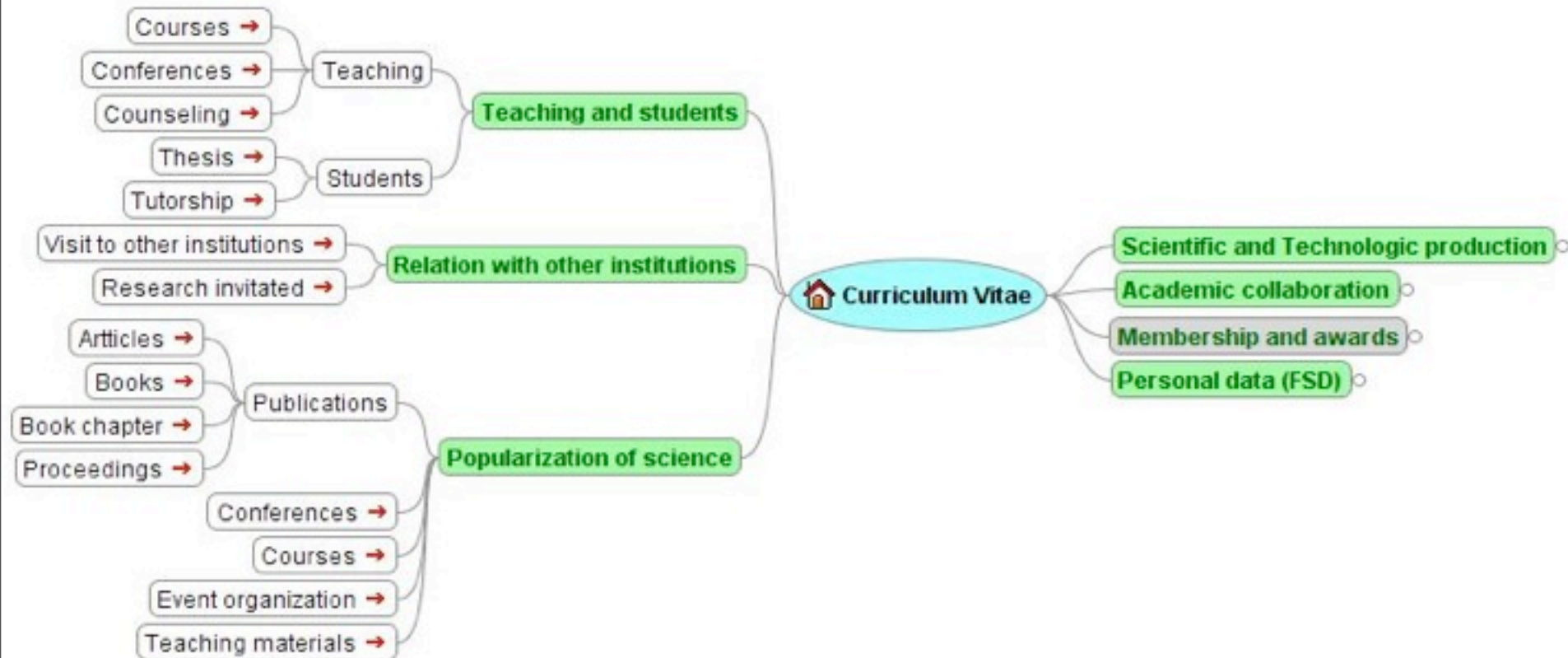
Grouping activities



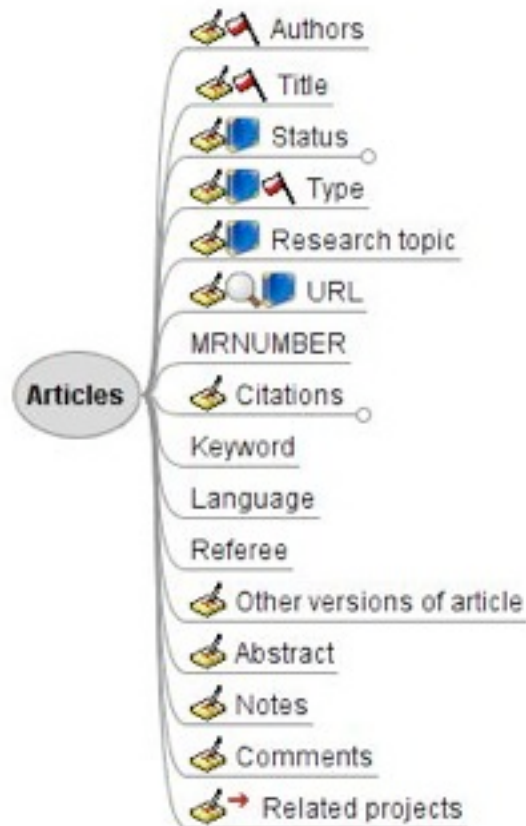
Grouping activities



Grouping activities



activities



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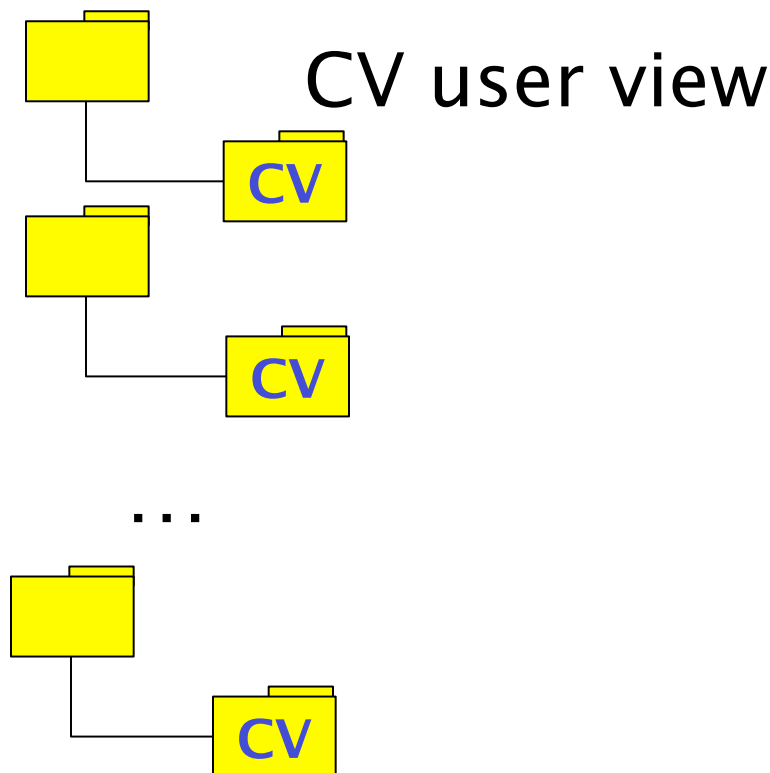
Design considerations

- ▶ New design proposal: only one repository for all activities, and use collections ?
 - Maybe
- ▶ Better way to organize items
- ▶ Avoid duplication of information
- ▶ BUT:
 - organization must reflect permissions

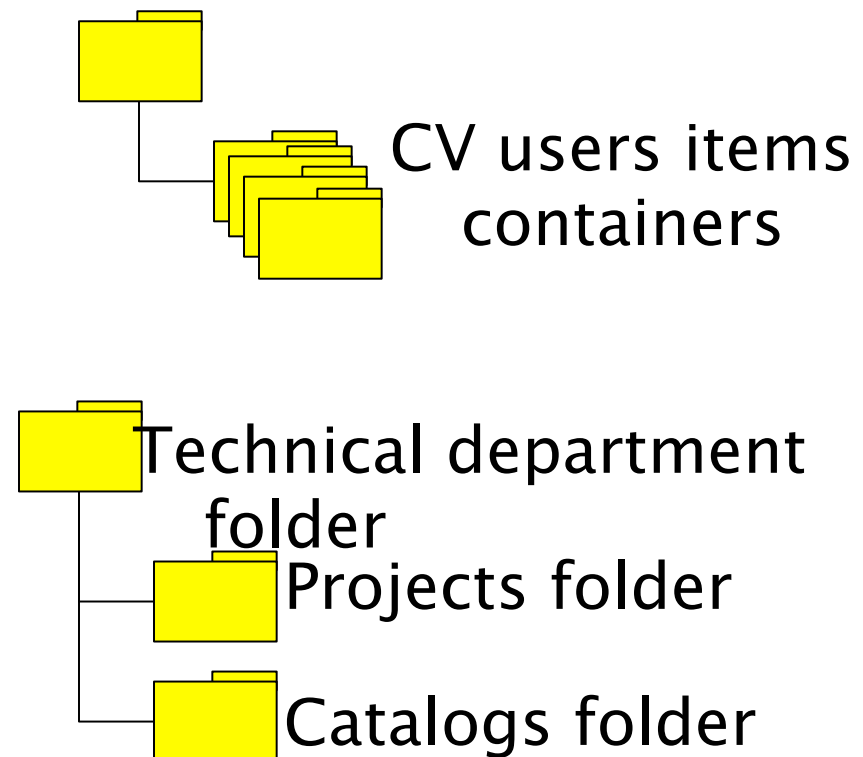
Architectural proposal

CV system architecture

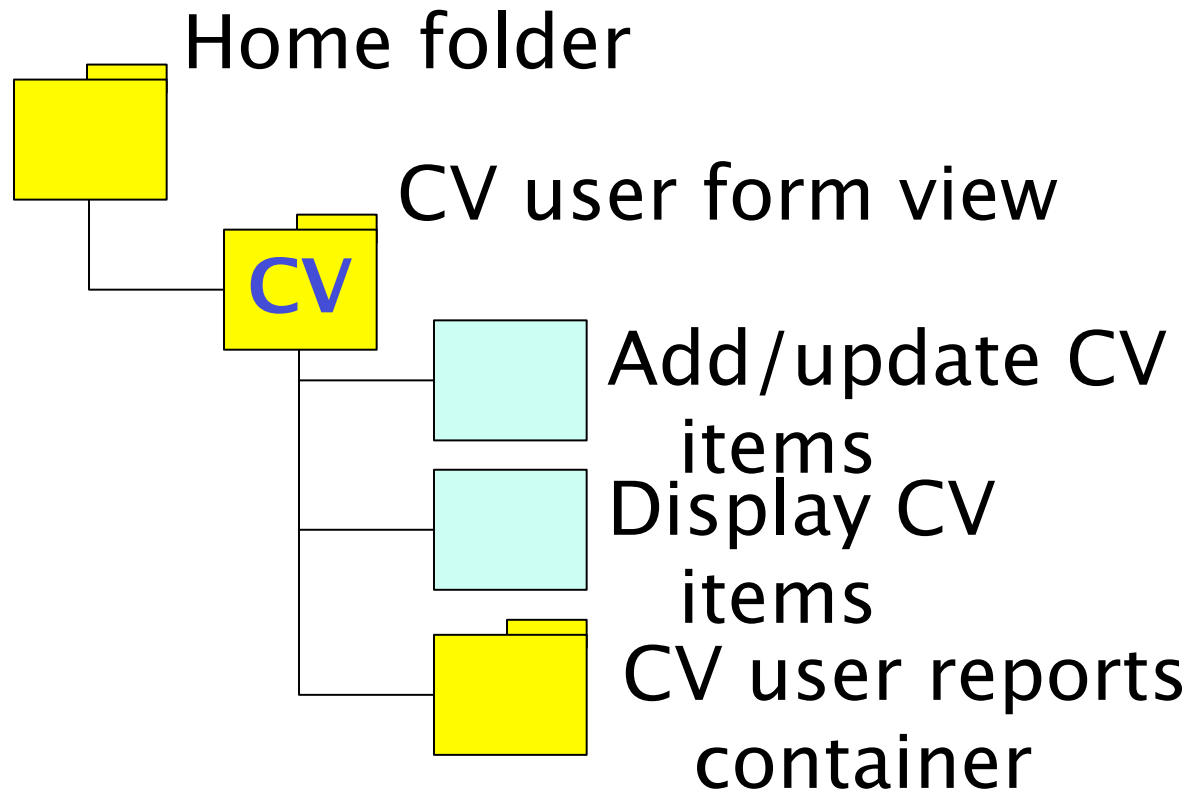
FSD Person's folder



CV repository



User container point of



A required feature: catalogs

- ▶ Journal description where article appears is a reference (select from internal catalog), the user only enters journal number and/or volume
 - Can maintain a full journal catalog with indexes, quality of journal, etc
- ▶ Authors of publication can be internal (select from internal catalog) or external

Migration to Plone 3.x

After design ends, implementation comes:

- ▶ More requirements than the 1st version!
- ▶ Select an appropriate way to create forms

Development progress

What are we doing now?

- CV items have all the fields required by final users
- Enter some CV items on a central repository
- Using Archetypes & Plone 3.x

What is missing?

- Views for users: link to central repository and reports
- Advanced widgets
- Central reports
- Data migration

Open questions

First

- ▶ Who's information owner? Institution or users?
- ▶ One approach: the institution
 - E.g. “Once a paper is reported, it belongs to the institution” it is an asset, and the institution has the responsibility for the item
- ▶ But the author should be allowed to modify an item “I want to say is related to another paper”

Second

- ▶ What's the better solution? Using only Archetypes, or a mix from Archetypes+z3c.form?
- ▶ One approach: a mix, when the requirement justifies the effort: subforms and add/edit forms

Conclusions

- Lessons learned
- Issues than need further thought and discussion

Collaborations

- ▶ Most universities have similar needs
- ▶ Our team is developing a plone system for another university
Universidad Pedagógica Nacional
(less technology/science oriented)
- ▶ **Mexico Plone group**
- ▶ WebLion FacultyStaff and other groups at this conference
- ▶ Very promising! Avoid duplications, and create better software

Lessons learned

- ▶ Communicate a lot with users
- ▶ Use mind maps for CV items definition
- ▶ Less time and the users are really involved in the project
- ▶ Provide added value to users

added value to users

- ▶ English/Spanish versions of their CV
- ▶ Short/long version, and restricting to dates or other type of content (only publications)
- ▶ Need to input less data

Data rights – important

- ▶ user A creates a CV item with user B as collaborator... user B should have rights to update item?!
- ▶ And user B should somehow be informed about this

Data responsibility— important

- ▶ user A creates a CV item with user B as collaborator...
- ▶ Who is responsible for the correctness of the data? For maintaining the data up to date?
 - E.g. Research project, personal phone number, joint publication

Flexibility

- ▶ Requirements change over time
 - e.g. University decides it want scientific vs. general public papers
- ▶ Users love when a required change (or bug) is corrected the same day

Confidence

- ▶ Export/import facilities give confidence to both users and developers.
- ▶ Use international standard formats

International standards

- ▶ Particular to each domain
- ▶ Math, biology, CS,... subject catalogs
- ▶ Bibtex, endNote, ...
- ▶ Ontologies, librarians
 - Dublin Core, RDF, ...

Achievable goal?

- ▶ Do not input data one day before deadline
- ▶ So much easier to do during the year, when you know about the data
“received paper acceptance letter”

Data reliability

- ▶ Data has errors, inaccuracies
 - Users input incorrect titles for their own publications, incomplete dates, omit some fields, etc.
- ▶ Specially problematic for duplicated entries
 - E.g. Paper reported twice by two coauthors

Main Lesson Learned

Collaborate, be humble



Cedalion standing on the shoulders of Orion, wikipedia

**Plone - use a framework,
open, extensible, and at the
right level of abstraction**

**Plone communities -
discuss with others, team
programming, reuse...**

Thanks for your attention