

Collaborative Planning of Lifelong Learning – a Flexible Approach

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Motivation

- Face-to-face guidance and support for career and educational choices has been found to be patchy and uneven
- Transitions from one stage of education to the next are critical decision points in a learner's journey and better targeted information may make these transitions more successful
- There is also a link between careers guidance and learner retention, based on correcting false assumptions and creating learners' expectations in line with real-life experiences of others
- In this direction, the L4A// system developed at the London Knowledge Lab aims to support lifelong learners in exploring learning opportunities and in planning and reflecting on their learning

Requirements Analysis

- Consultation early in the L4A// project with groups of FE and HE learners found that
 - careers advice is often patchy
 - social factors influence educational and career choices
 - word-of-mouth recommendations play an important role
- The L4A// project (funded by JISC) aimed to provide learners in the London region with access to information and resources for facilitating their progression from Secondary Education, through to FE and HE
- It took a holistic view of individuals' life, work and learning experiences



L4A// Project Partners

- Birkbeck College
- Institute of Education
- Community College Hackney
- UCAS
- Linking London Lifelong Learning Network
- College of North East London
- Advisors: John Cook (LMU), Gareth Dent (Ufi), Graeme Atherton (Aim Higher), Paul Welch (Prospects), Suzanne Overton-Edwards (City of Westminster College), Stuart Swann (Greenwich Learning Centre), Richard Rayne (BBK), Sarah Vaughn (BBK), Sue Jackson (BBK)
- Sarah Davies and David Kernohan, JISC Programme Managers

Design

- The L4A// system was co-designed with groups of FE and HE students, educators and other stakeholders
- A consultation process was undertaken at the project start to identify learners' educational goals and career objectives, with the aim of accommodating the needs of different user groups.
- Interviews were held with FE learners from Community College Hackney and City of Westminster College; and with HE mature learners at Birkbeck



Design

- The L4A// system allows learners to
 - enter information about themselves, and their work and learning backgrounds
 - create and maintain a chronological record of their learning, work and personal episodes – their *timeline*
 - share their timeline information with other users
 - search over this information as well as over course-related information

Select an Episode Category

Learning Episodes

-  Attended school
-  Attended college
-  Attended university
-  Attended a particular course
-  Obtained a degree or diploma

Learning Episodes

These episode represent any learning activities you experienced, through educational institutions (such as college) or informally (such as attending a seminar).

Occupational Episodes

-  Employed
-  Started business
-  Working in voluntary sector
-  Attended military service
-  Retired from work
-  Unemployed
-  Working as carer / homemaker

Occupational Episodes

These episode represent any occupations or professional activities you experienced in the formal or informal sector.

Select Category

Close

Edit Episode



— school —

Subject:

Qualification:

Nature:
 Fact
 Wish

Start:

End:

Title:

Description:

URL:

school
Edit this episode
The fields in bold are compulsory.

October, 1995							
Today							
wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
39	1	2	3	4	5	6	7
40	8	9	10	11	12	13	14
41	15	16	17	18	19	20	21
42	22	23	24	25	26	27	28
43	29	30	31	Select date			

Close

Distinctive Features

- The approach is distinctive in that the timeline provides a record of *lifelong learning*, rather than learning at just one stage or period
- Learners can choose to make their timelines “public” and thus accessible by other users
- This sharing of timelines exposes future learning and work possibilities that may otherwise not have been considered
- Aims to support collaborative formulation of future learning goals and aspirations

Design – Search for “People Like Me”

- A key aim of the system is to allow learners to search over the timeline data, and to identify possible choices for their own future learning and professional development by seeing what others with a similar background have gone on to do
- A facility for searching for “People Like Me” takes users through a three-step process in specifying timelines that might be relevant to them:

Search for people ...

... who share

- my age (within years)
- my gender
- my qualification
- my occupation
- my location

User Profile

Select the criteria that you want to find in the other people's profile.

... and who have a similar pattern with

- All Episodes
 - Learning Episodes
 - Attended school
 - Attended college
 - Attended university
 - Attended a particular course
 - Obtained a degree or diploma
 - Occupational Episodes
 - Personal Episodes
 - Other Episodes

Timeline

Check/uncheck the episodes you want to be considered in the pattern.

... using

Classification at level:

- 0
 1
 2
 3
 4

Search Method

Search Options

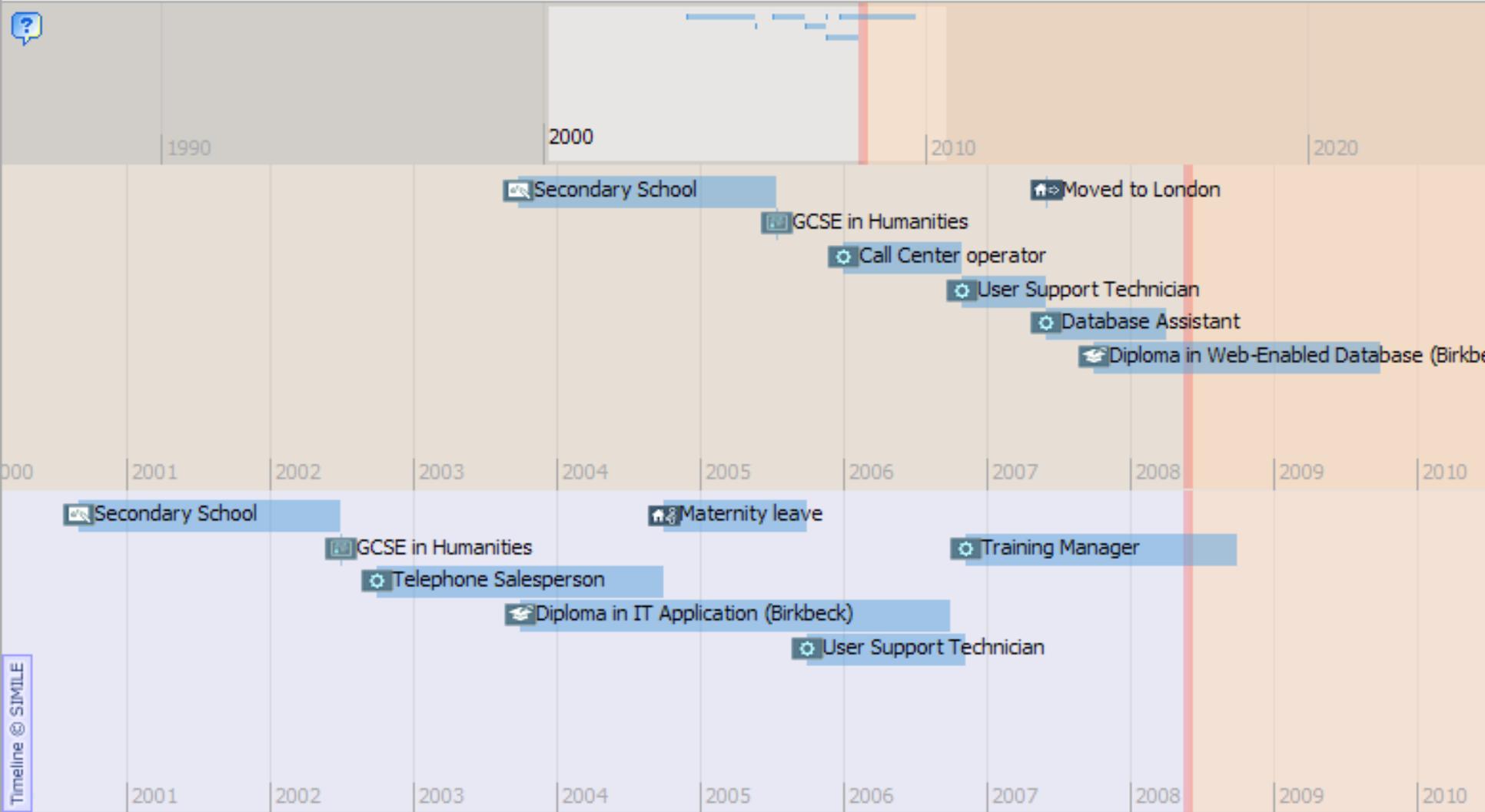
Select the criteria that you want to use to search for people like you.

Search for “People Like Me”

- Once a definition of “People Like Me” has been specified, the system returns a list of all the candidate timelines, ranked by their similarity to the user’s selection
- The user can then select one of these timelines to visualise and explore further
- The selected timeline is shown in the main page as an extra strip below the user’s own timeline
- Episodes within the selected timeline that have been designated as being “public” by its owner are visible, and the user can select and explore these:

Timeline Filters

Filter: Highlight by keyword: Highlight by category:



“What Next”

- An evaluation of the search for “People Like Me” functionality was undertaken with a group of mature learners at Birkbeck
- This study identified that more support was needed from the system in explicitly identifying possible future learning and professional opportunities for the user
- In follow-on work, we developed the “What Next” facility
- This is a more contextualised usage of timeline similarity matching, which explicitly indicates which episodes of the target timeline have no match within the user’s own timeline
- Such episodes potentially represent episodes that the user may be inspired to explore or may even consider for their own future personal development:



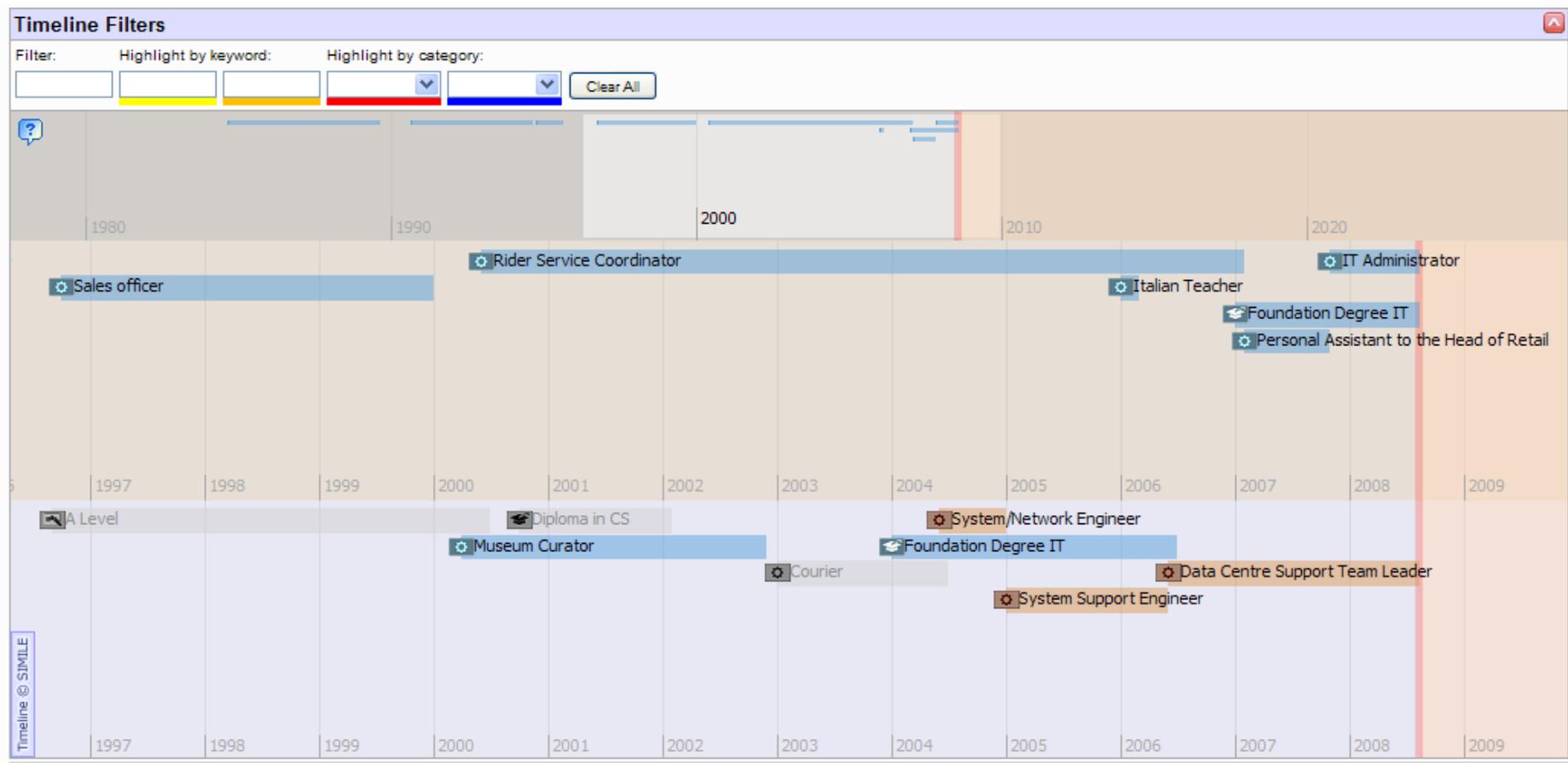
What can I do next?

Timeline	Name	Description / Keywords	Similarity
Show	Alumni 3	Currently working as IT Development Programmer for an hotel. Former student at Bikbeck (FD-IT in 2007).	0.22
Show	Alumni 4	Currently working as IT Trainer for Unilever (London). Former student at Bikbeck (FD-IT in 2005).	0.20
Show	Alumni 2	Currently working as a senior Project Manager in London. Former student at Bikbeck (FD-IT in 2006).	0.17
Show	Alumni 5	Currently working as an IT researcher for the financial sector. Former student at Bikbeck (FD-IT in 2007).	0.17
Show	Alumni 1	Currently working as a Support Team Leader, supervising production hardware and systems. Former student at Bikbeck (FD-IT in 2006).	0.06

Page 1 of 1 (5 timelines)



Clicking on **"Show"** will display the corresponding timeline in the main page





About this user ... ✖

alumni1	Match	You
	←	Diploma in Commerce/Informatics (CI-6.4-4.1)
	←	Software programmer (Wk-J.0-2.1)
	←	Diploma in Architecture (Un-9.1-6.3)
A Level (CI-0.0-4.1)	→	
Museum Curator (Wk-R.0-2.4)	↔	Sales officer (Wk-R.0-2.4)
	←	Rider Service Coordinator (Wk-C.0-3.5)
	←	Italian Teacher (Wk-P.0-2.3)
Diploma in CS (Un-6.4-6.3)	→	
Courier (Wk-N.0-9.2)	→	
Foundation Degree IT (Un-6.4-6.1)	↔	Foundation Degree IT (Un-6.4-6.1)
	←	Personal Assistant to the Head of Retail (Wk-G.0-4.2)
	←	IT Administrator (Wk-K.0-3.1)
System/Network Engineer (Wk-S.0-3.1)	→	
System Support Engineer (Wk-J.0-3.1)	→	
Data Centre Support Team Leader (Wk-J.0-2.1)	→	

Options:

Synchronise the two timelines

[Swap View](#)

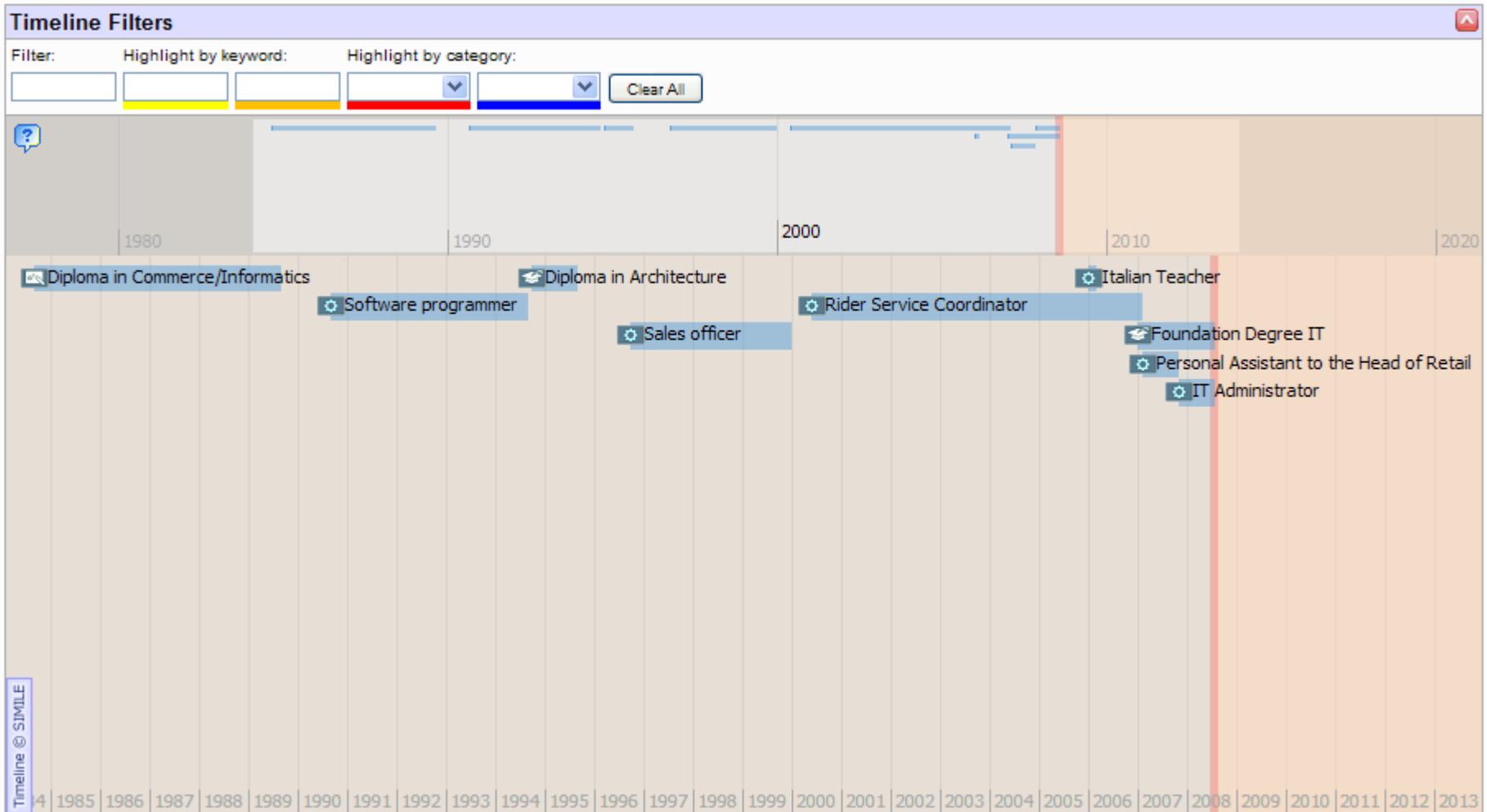
Bookmarks

[Add this user](#)

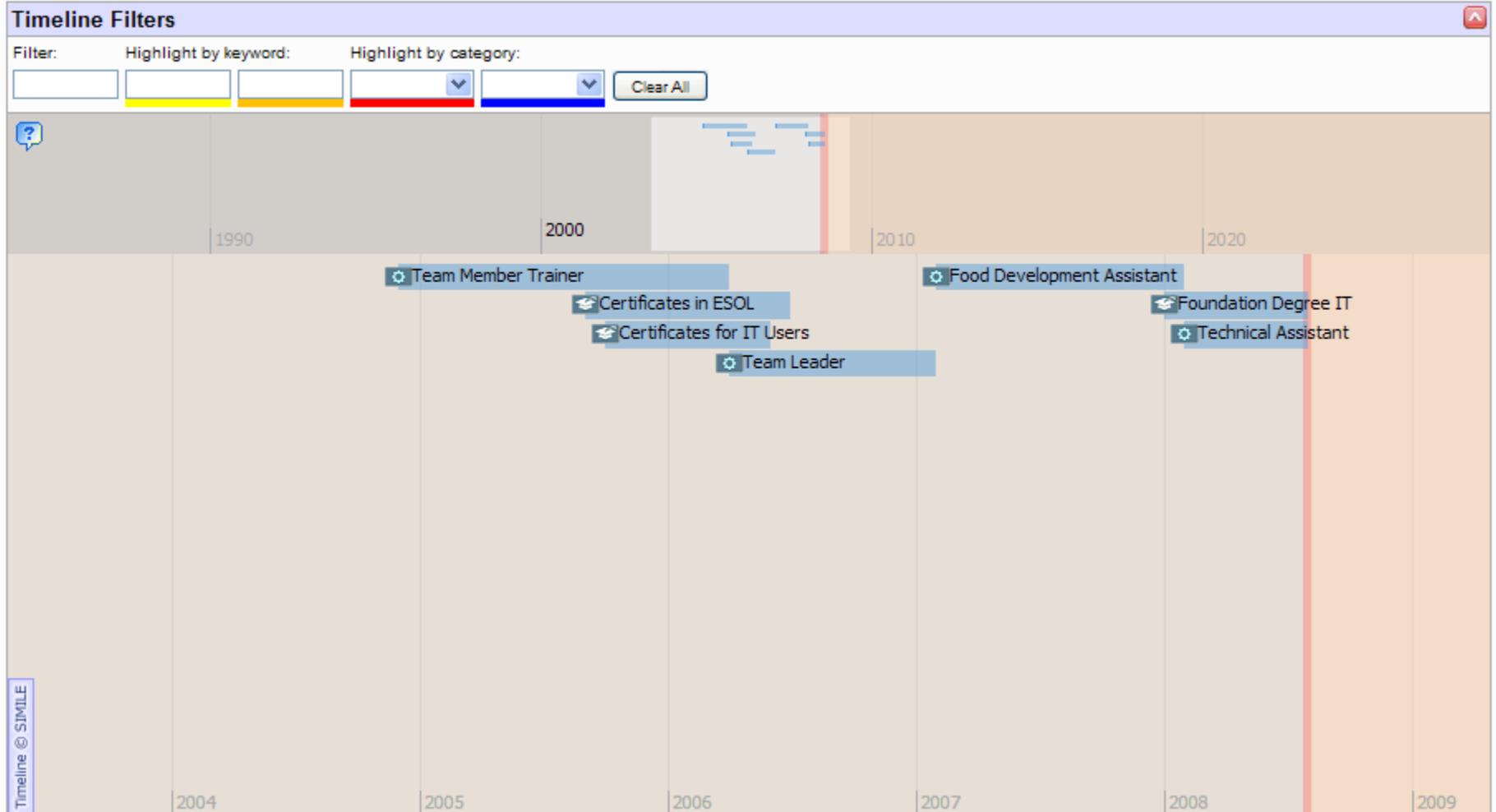
Evaluation

- Two evaluation sessions were held with mature learners at Birkbeck and at the College of North East London (CONEL)
- The Birkbeck students were studying on the Foundation Degree in IT and the CONEL students were studying on the Foundation Degree in Counselling
- Overall, there was satisfaction with the main functionalities provided the system
- Participants could see its value in helping learners reflect on their current learning, gaining self-confidence, and identifying possibilities for their future work and learning episodes.
- There was clearly an appreciation by users that the system aims to offer possibilities for future learning and work choices, rather than making specific recommendations.

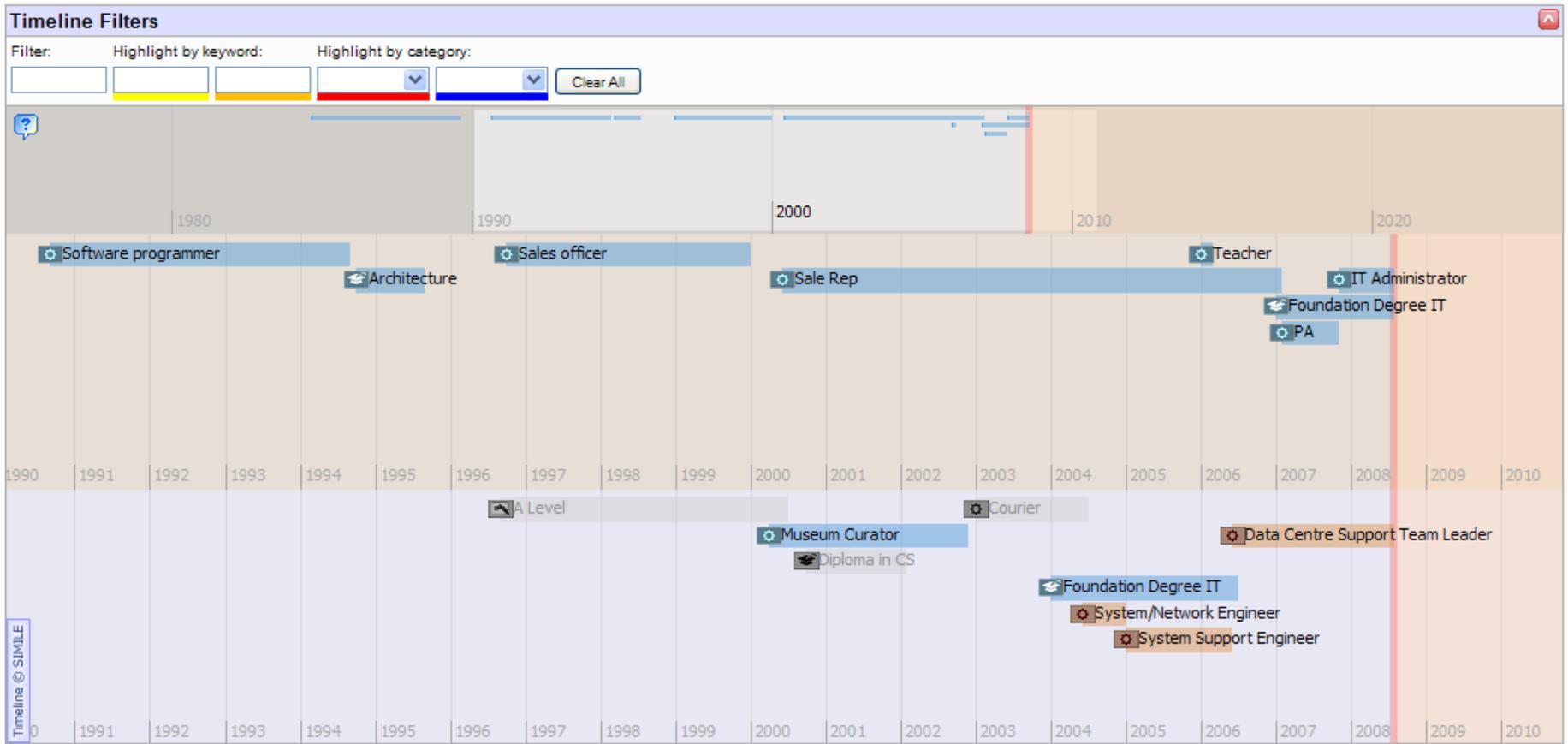
Case Studies: User 1



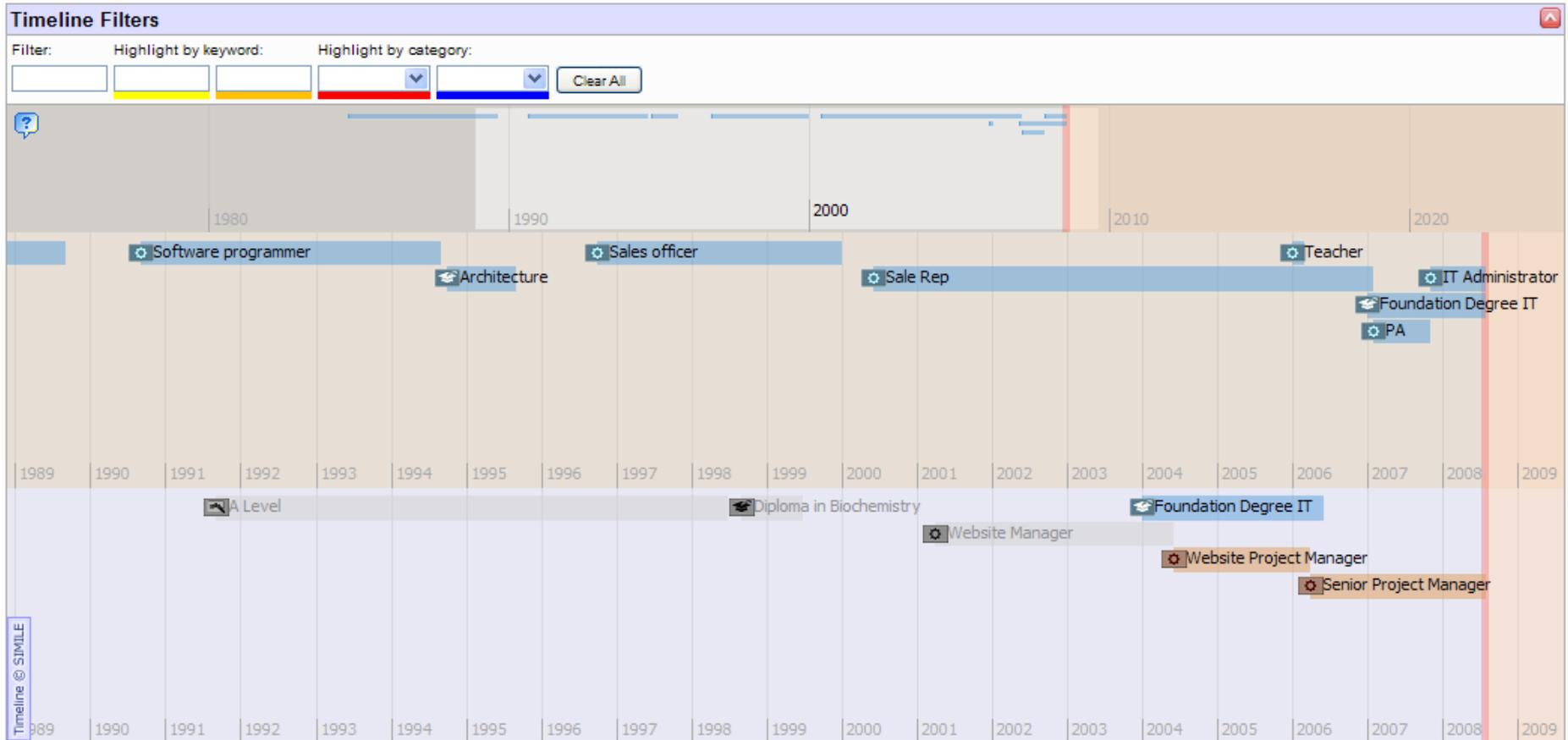
User 2



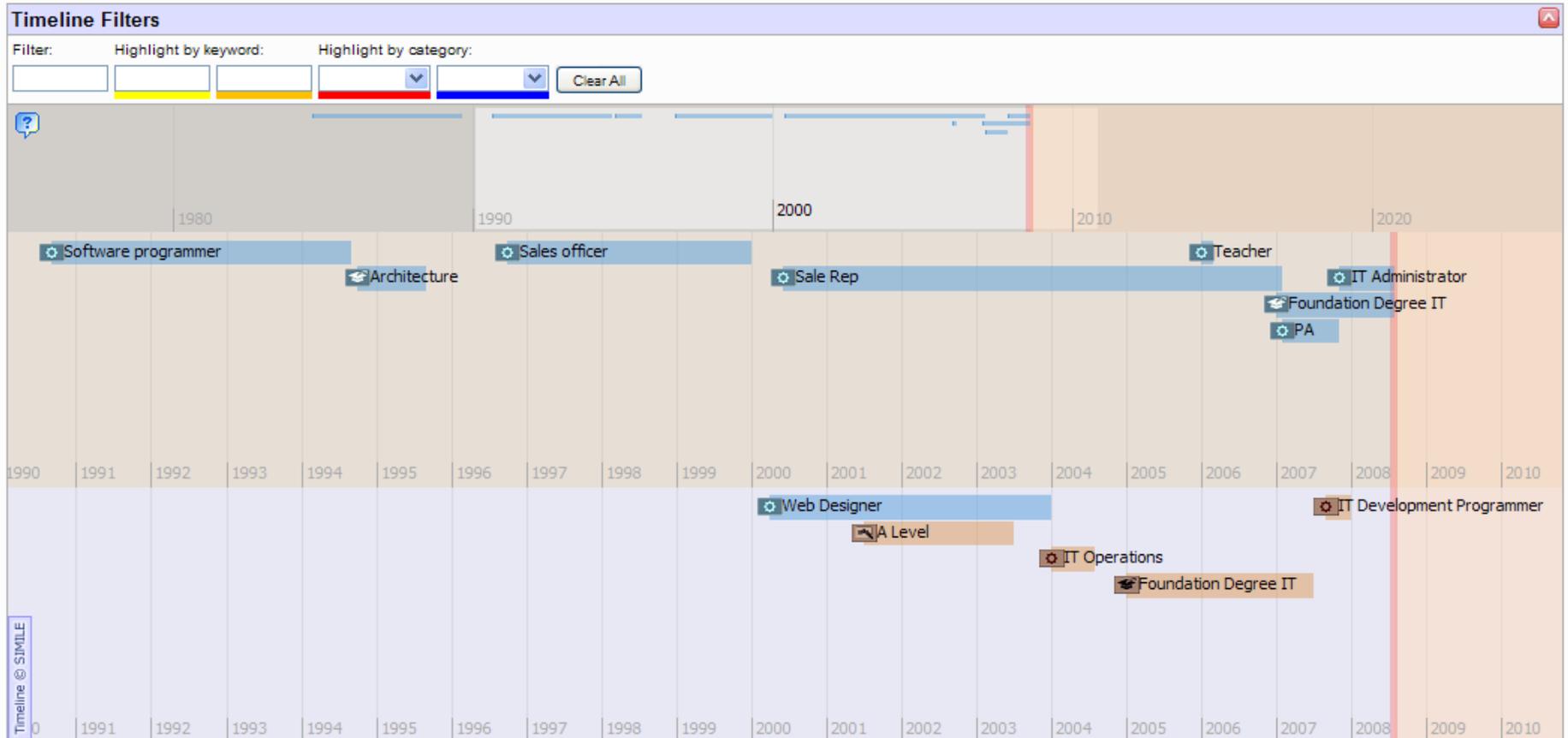
User 1 + Alumni 1



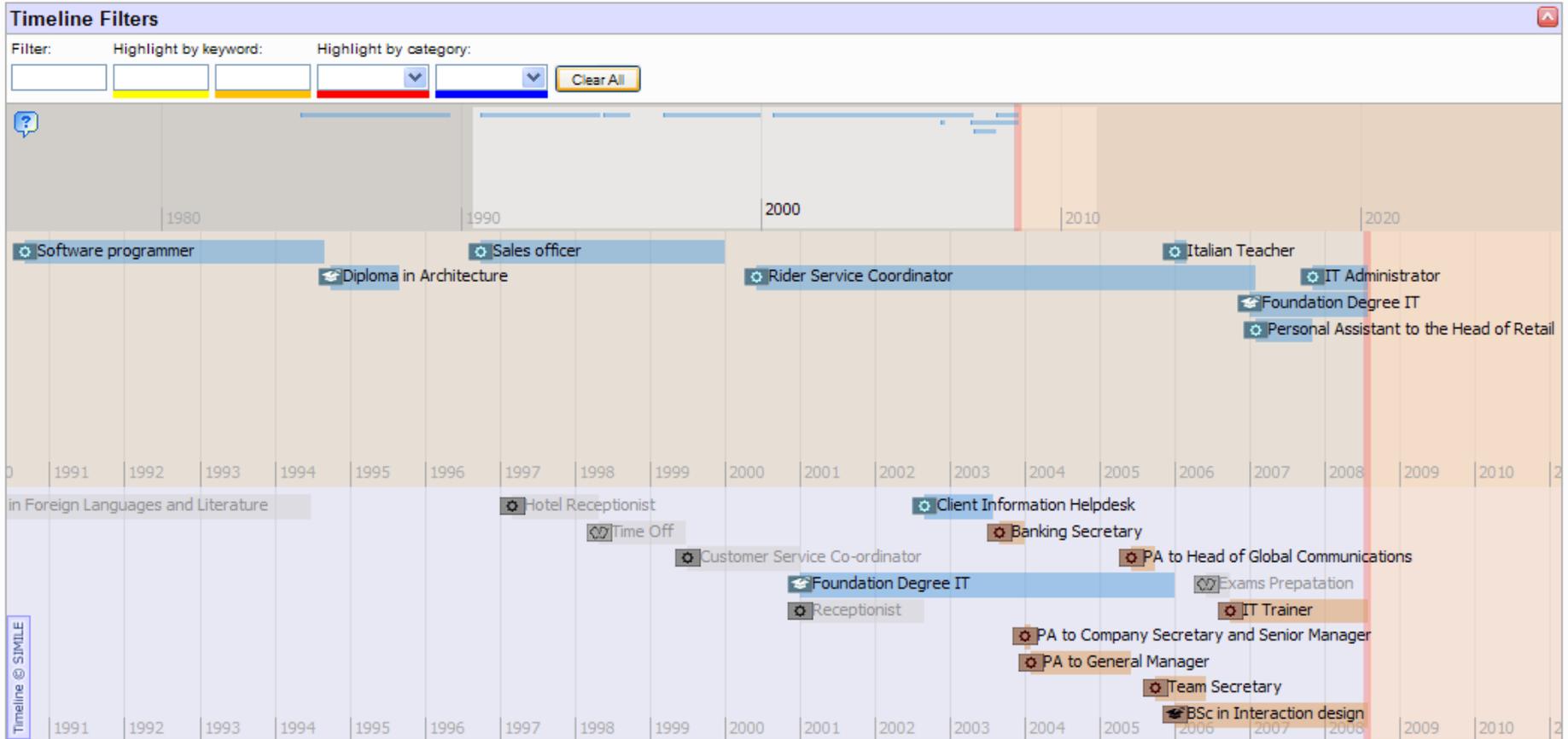
User 1 + Alumni 2



User 1 + Alumni 3



User 1 + Alumni 4



Alignment Explanations (User 1 vs Alumni 4)

About this user ...

alumni4	Match	You
	←	Team Member Trainer (Wk-I.0-3.5)
	←	Certificates in ESOL (Un-14.3-5.1)
	←	Certificates for IT Users (Un-6.4-5.1)
	←	Team Leader (Wk-I.0-4.1)
	←	Food Development Assistant (Wk-I.0-4.1)
Diploma in Foreign Languages and Literature (Un-15.0-6.3)	→	
Hotel Receptionist (Wk-I.0-4.2)	→	
Time Off (Ue-0.0-0.0)	→	
Customer Service Co-ordinator (Wk-L.0-7.2)	→	
Receptionist (Wk-M.0-4.2)	→	
Foundation Degree IT (Un-6.4-6.1)	↔	Foundation Degree IT (Un-6.4-6.1)
	←	Technical Assistant (Wk-I.0-4.1)
Client Information Helpdesk (Wk-K.0-3.1)	→	
Banking Secretary (Wk-K.0-4.2)	→	
PA to Company Secretary and Senior Manager (Wk-K.0-4.2)	→	
PA to General Manager (Wk-J.0-4.2)	→	
PA to Head of Global Communications (Wk-G.0-4.2)	→	
Team Secretary (Wk-G.0-4.2)	→	
BSc in Interaction design (Un-6.4-6.1)	→	
Exams Prepatation (Ue-0.0-0.0)	→	
IT Trainer (Wk-G.0-3.1)	→	

Options:

Synchronise the two timelines

Show timeline

Bookmarks

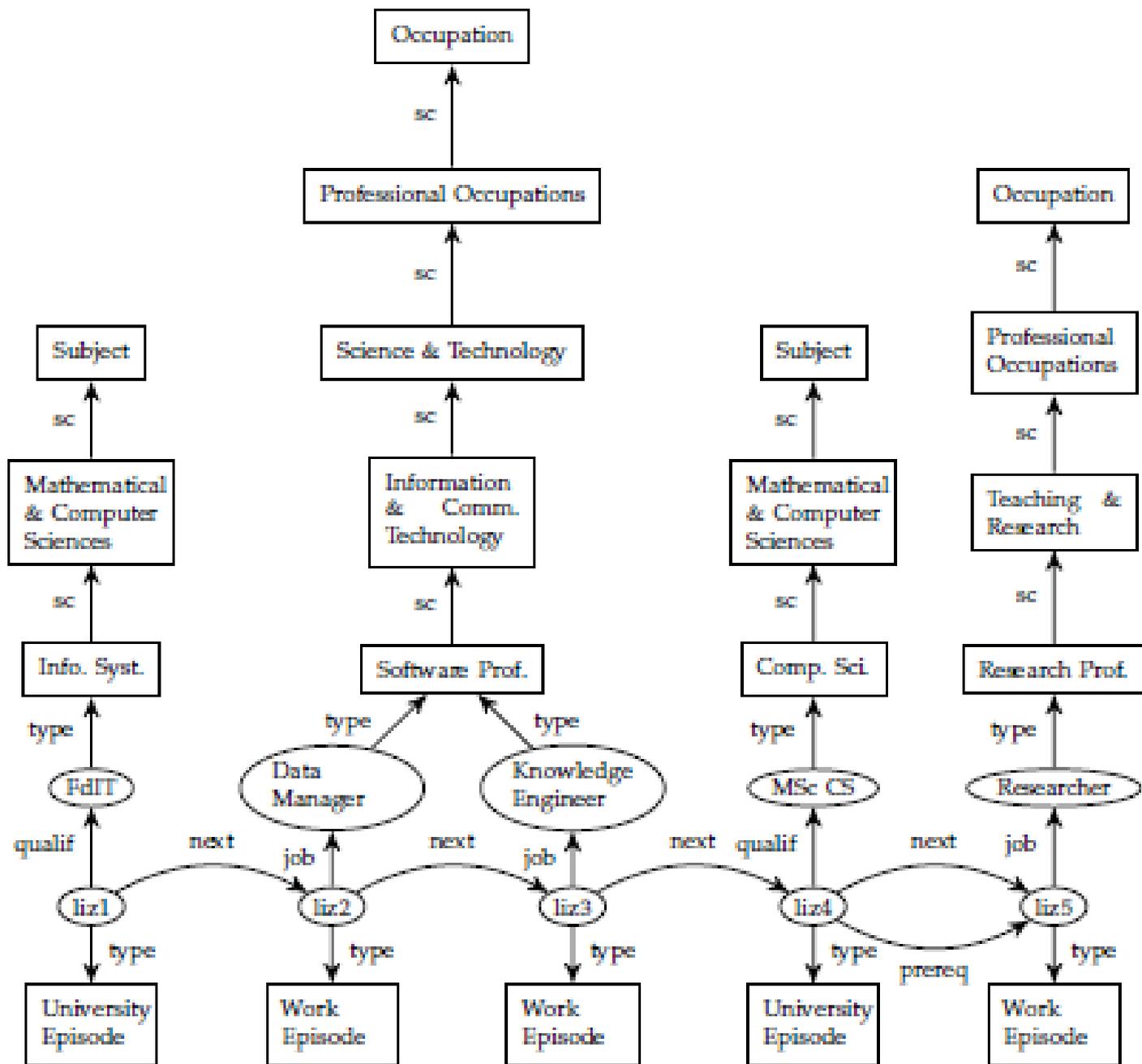
Add this user

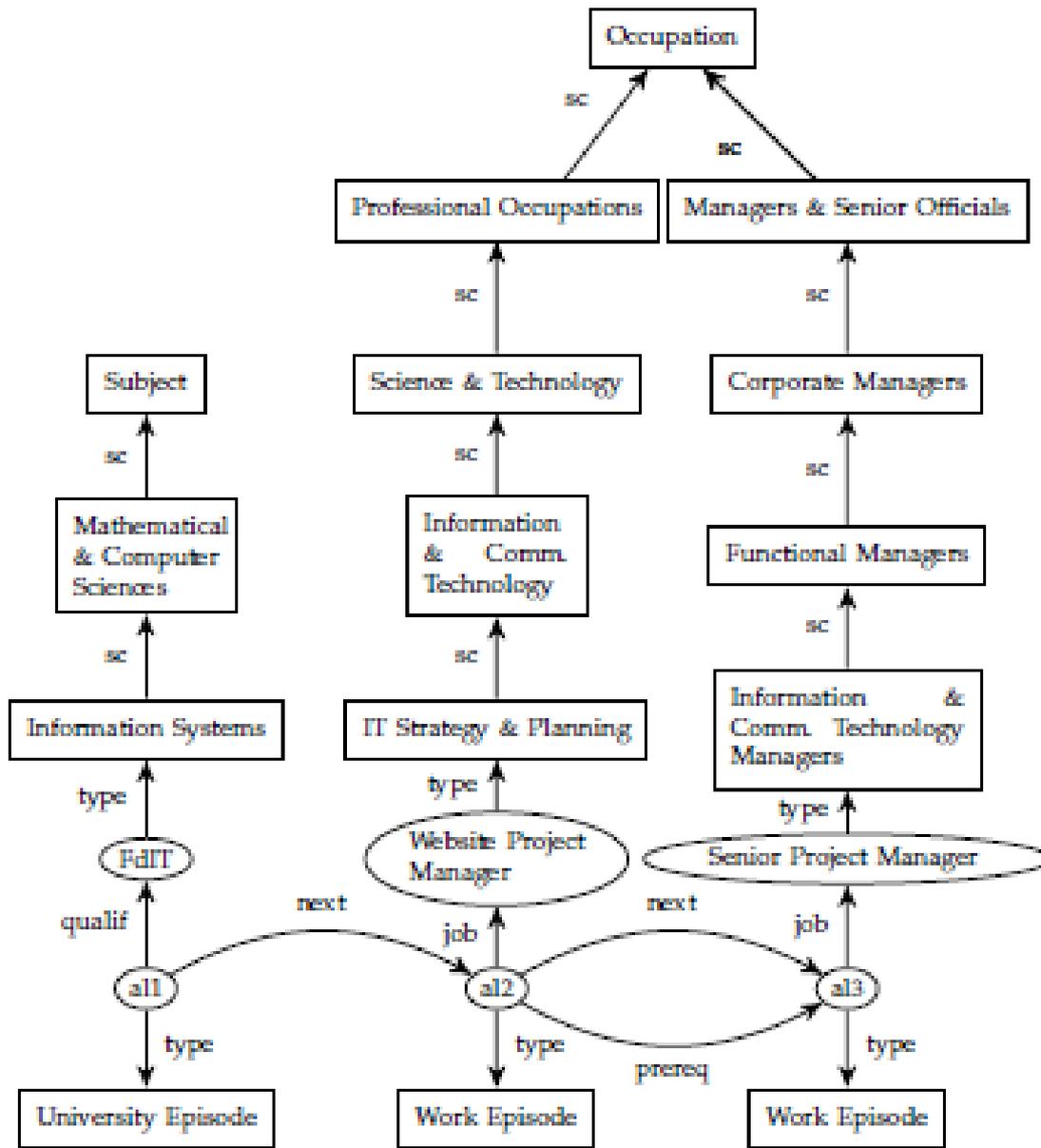
More Flexible Matching

- Although the “What Next” facility helps users to find and explore relevant timelines and episodes, it has a number of limitations:
 - the methods of measuring the similarity between two timelines are *fixed* within the system
 - only a *single level of detail* can be applied to the classifications of the selected categories of episode
 - the similarity matching is applied to *all* these categories of episode in the user's timeline and the target timelines i.e. the user cannot select individual episodes
 - the top-ranked timelines returned are timelines that are *most similar* to the user's timeline; these may in practice offer few suggestions of episodes for the user's future development

More Flexible Matching

- We are therefore currently investigating more flexible techniques for supporting users' search over timelines:
 - the ApproxRelax query prototype
 - joint work with Petra Selmer and Peter Wood
- The next two screens show (part of) the information relating to users' timelines, showing the successive episodes, the relationships between episodes, and their classifications
- The screens after that show the current query interface of the ApproxRelax prototype







Home

Query

Test harness

Run a query on the Timeline data



Create an educational episode

Click on the image



Create an occupational episode

Click on the image

Run a query on the Timeline data



Create an educational episode
Click on the image



Create an occupational episode
Click on the image

Educational episode

Type

University Episode ▼

Subject

Information Systems ▼

Relax?

Next

Done

Run a query on the Timeline data

[Reset query](#)



Create an educational episode
Click on the image



Create an occupational episode
Click on the image

Occupational episode

Link from previous

Next



Approx?



Type

Work Episode



Occupation

Software Professionals



Relax?



Next

Done

Run a query on the Timeline data

[Reset query](#)

Episodes



1



2

Link from previous episode: **Next** (*approximated*)

Type: **Work Episode**

Occupation: **Software Professionals** (*relaxed*)



Run a query on the Timeline data

[Reset query](#)

Results



Liz

Distance is 0; Liz Episode 2: 'UK Data Manager'

Worked in the research industry as an extracts analyst; obtained the Birkbeck Foundation Degree in IT; worked as a UK data manager and knowledge engineer; obtained the Birkbeck MSc in Computer Science; currently works as a researcher



Liz

Distance is 1; Liz Episode 3: 'Knowledge Engineer'

Worked in the research industry as an extracts analyst; obtained the Birkbeck Foundation Degree in IT; worked as a UK data manager and knowledge engineer; obtained the Birkbeck MSc in Computer Science; currently works as a researcher



Al

Distance is 2; Al Episode 2: 'Website Project Manager'

Obtained A-levels in the physical sciences; obtained a Diploma in Biochemistry; worked as a website manager; obtained the Birkbeck Foundation Degree in IT; currently works as a senior project manager



Liz

Distance is 8; Liz Episode 5: 'Researcher'

Worked in the research industry as an extracts analyst; obtained the Birkbeck Foundation Degree in IT; worked as a UK data manager and knowledge engineer; obtained the Birkbeck MSc in Computer Science; currently works as a researcher

More?

Conclusions

- Facilitating the collaborative formulation of learning goals and career aspirations has the potential to enhance learners' engagement with the lifelong learning process
- The L4A// system offers similarity matching over learners' timelines in order to identify possible choices for future learning and professional development
- In current work we are investigating more flexible techniques for supporting users' search over timelines
- Using these querying techniques, users would be able to specify flexible combinations of approximations and relaxations to be applied to their search query
- Query results would be returned incrementally by the system, as requested by the user, ranked in order of increasing "distance" from the search query

Future Plans

- Completion of the prototype supporting the new querying facilities
- Evaluation of the new querying facilities with groups of lifelong learners at our institution and others

If you are interested in participating in a trial of the system please come and see me after this talk; or email me at

ap@dcs.bbk.ac.uk

- Extension of the L4A// prototype with the new facilities
- Offering L4A// as a service to Birkbeck students