Personalized Information Services: the infoFACTORY Project

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Artificial Intelligence Laboratory
infoFACTORY Group

PIA 2005 - UM’05, July 24 2005
Contents

• Problems and vision
• The infoFACTORY idea
• Intelligent Platforms for Personalized IA on the Internet
• Applications
• Research activities
General Problems

• Information Explosion
• E-Contents Overload

• Strategic Value of Information & Knowledge (IST)

• Information is the ‘vehicle’ of Knowledge

• Unstructured information
Problems with (unstructured) Information (and Knowledge)

- Problems in searching, accessing, delivering...
- Two perspectives: PULL & PUSH

**Pull:**
- Oversupply, overload
- Miss-retrieval (common accuracy of search engines: 20%-30%)
- Untimeliness

**Push:**
- Miss-delivery
- Oversupply
- Waste
- Untimeliness

- Two difficult linguistic phenomena: Polisemy, Sinonimity
The fundamental limitations of current approaches and tools

- Key-word based: NO semantic analysis of texts
- ‘One-size-fits all’ approach: all users are treated the same way,
  - NO comprehension of individual information needs and preferences
  - Presentation and delivery are the same for all users
Towards a Solution
Personalization means delivering:

- the right content
- to the right user
- in the right moment and
- in the most suitable way
Adaptive Personalization

• Adaptivity allows to automatically tailor system behaviour and processing to the specific characteristics of the (observed) user behaviour

• Machine Learning, Conceptual Linguistic Analysis, Knowledge Representation, User Modeling, HCI, Intelligent Agents, Semantic Web, …
CARLO TASSO
PAOLO OMERO

LA PERSONALIZZAZIONE DEI CONTENUTI WEB

e-commerce, i-access, e-government

Collana di informatica
FrancoAngeli
Content Personalization

Personalized SELECTION

available contents

selected contents

Personalized PRESENTATION

contents

end user

Poket PC, UMTS, Smart Phone, WAP, GPRS, PC

Personalized DELIVERY

(from C. Tasso, P. Omero, La Personalizzazione dei Contenuti WEB, © F. Angeli, Milano, 2002.)
Content Personalization

Available contents

- selected contents

- contents

- end user

Personalized SELECTION

Personalized PRESENTATION

Personalized DELIVERY

(from C.Tasso, P.Omero, La Personalizzazione dei Contenuti WEB, © F.Angeli, Milano, 2002.)
Semantic (content-based) Personalized Information Filtering

Filtering information by means of a ‘semantic’ analysis of a document and by matching it against an individual user profile

“...Evaluating an interface for an information retrieval system can not rely only on standard precision and recall, but needs to take into account also user satisfaction...”

The IFT Algorithm
(Minio & Tasso, 1996)

- Positive Sample Documents
- Negative Sample Documents
- Documents to be filtered (html, xml, pdf, postscript, doc, text, latex, ...)

PROFILE BUILDER

User Profile

LINGUISTIC PROCESSOR

Conceptual Content of a Document

MATCHING

Evaluation of the relevance of the document

Relevance feedback from the user

(from C.Tasso, P.Omero, La Personalizzazione dei Contenuti WEB, © F.Angeli, Milano, 2002.)
The User Profile

(Semantic) network with lexical stems representing concepts associated to NODES and co-occurrence information attached to ARCS.


User Profile Construction

• Through analysis of sample texts (positive or negative examples)
• Lexical stemming (Porter’s algorithm)
• Stop word list
• Frequency of Concepts (lexical stems)
• Co-occurrence information

• No need for ad-hoc ontologies nor KB
Matching Documents against Profiles

- Weighted matching algorithm, taking into account frequency of concepts and frequency of co-occurrence of concepts
- Assumption: Relevance = Topicality
Experimental Evaluation of the IFT Algorithm: Precision

(Asnicar, Di Fant & Tasso, 1997)
Experimental Evaluation of the IFT Algorithm: Ranking Quality

(NDPM)

(Asnicar, Di Fant & Tasso, 1997)
The TIPS Project in FP5 IST
2000-2002

- Innovative advanced services in electronic publishing (scholarly journals)
- Filtering service on new incoming information
- Application in the field of High Energy Physics


(Mizzaro and Tasso, 2002)

tips.sissa.it
The TORII Portal
Documents from 2001-11-01 since 2001-12-30 on cs (57 results)

- **arXiv:cs:0101029** [document] [Submitted: 2001-01-26]
  - Title: Tap Tips: Lightweight Discovery of Touchscreen Targets
  - Authors: Hurst, Amy | Woodruff, Allison | Aoki, Paul M.

- **arXiv:cs:0101035** [document] [Submitted: 2001-01-26] [Last revision: 2001-02-01]
  - Title: The Guidebook, the Friend, and the Room: Visitor Experience in a Historic House
  - Authors: Aoki, Paul M. | Hurst, Amy | Szymanski, Margaret H. | Woodruff, Allison

  - Title: Quantum Multi-Prover Interactive Proof Systems and Quantum Characterizations of NEXP
  - Authors: Kobayashi, Hirotada | Matsumoto, Keiji

- **arXiv:cs:0103016** [document] [Submitted: 2001-03-20]
  - Title: Search in Power-Law Networks
  - Authors: Adamic, L. A. | Lukose, R. M. | Puniyani, A. R. | Huberman, B. A.

- **arXiv:cs:0106049** [document] [Submitted: 2001-06-25] [Last revision: 2001-12-06]
  - Title: Recursively Undecidable Properties of NP
The infoFACTORY Project
The Vision:

*personalized information services can help reducing information overload and can overcome some limitations of current approaches*
The infoFACTORY Concept

• Delivering personalized information services starting from any digital information source (E-Content)
• Adaptive personalization by means of content-based individual profiles
• Overcoming information overload by filtering, categorizing, ranking, alerting, and monitoring digital sources
• “Delivering the right content, to the right user, at the most adequate time, and in the most suitable way”
Digital E-Content Space

E-Content Consumer Space

(info producers, information brokers, info re-distributors, service&content providers, vertical portals, infomediators, web clippers,…)

B2C
(individual end users, virtual communities, associations, learneres, …)

28/07/2005
(from C.Tasso, P.Omero, *La Personalizzazione dei Contenuti WEB*, © F.Angeli, Milano, 2002.)
The infoFACTORY Technical Approach

• **Cognitive (content-based) Filtering**
  – Analysis of the conceptual content of textual documents
  – Semantic networks for describing user interests
  – Filtering obtained by matching documents against profiles

• **Adaptive Personalization**
  – Individual user profiles
  – Machine learning algorithms for automatically building and updating user profiles on the basis of positive (negative) examples
Intelligent Platforms

for achieving flexibility, re-usability, interoperability, scalability, …

in providing personalized information services
Contraction of personal Data Banks

- Web Monitoring and Clipping service
- Finding Experts
  - Match making module between expert competences and requests
- E-mail filtering
  - Automatic categorization
  - Antispam Filter

- MONITOR
- EXPERT
- MAIL

Others...

Cognitive filtering
Adaptive Personalization
Classification
Conceptual analysis of natural language
Multichannel Opp. Alerting
Intelligent Crawling

INFOFACTORY technologies and basic components
**Short Description:**

- **System Level**
  - E-mail filtering
  - Match making module between expert competences and requests
  - Automatic categorization

- **Application Level**
  - Web Monitoring and Clipping service
  - Finding Experts
  - E-mail filtering
  - Match making module between expert competences and requests
  - Automatic categorization

**Consortium of personal Data Banks**

- **Multichannel Alerting**
- **Classification**
- **Intelligent Crawling**

**infoFACTORY technologies and basic components**

- Cognitive filtering
- Conceptual analysis of natural language
- Adaptive Personalization
- Classification
- Intelligent Crawling
- Others..
Intelligent Platform 1: MONITOR

for Web Monitoring and Filtering
Filtering Web Information

• Using the IFT algorithm for filtering information gathered from the Web by means of an opportunistic (automatic) human like navigation (crawling), relevant for a given user profile

  (Tasso and Armellini, 1999)

• Integration of various technologies and tools
Monitoring Web Information

- Periodically analysing the content of Web sites and portals for timely discovering new relevant information

- Search Engine monitoring
Personalized Filtering Services based on conceptual analysis of textual Web documents:

- Automatic construction of personalized **THEMATIC DATA BANKS** of Web documents
- **WEB MONITORING**, continuous periodic control of online sources
  - and multichannel ALERTING
What are they useful for?

- Technological monitoring
- Monitoring scientific and technical journals
- Reputation management
- Press review
- Competitive intelligence
- Keeping knowledge worker always updated
- Crisis management
- Monitoring events
- Monitoring financial funding open calls
- Discovering research groups belonging to other organizations in the same area of interests or research
What advantages?

• Reducing manual activities for searching information (higher productivity – 24/24, 7/7 and 365/365)

• Finding information published in sites not (or rarely) indexed by standard search engines

• Timely discovery and multi-channel delivery of new relevant information

• Much more precise than other competitors (90% vs. 20-30% of standard search engines)

• Innovative information services (personalized services, alerting, mobile access)
UTENTE
(Addetto Comunicazione, Ufficio Stampa, DG, …)

WEB

Argomenti di interesse, esempi

Monitor

Documenti dell’utente

Consultazione e ricerca tramite Motore

Portal

Inserimento documenti dal proprio PC*

Inserimento manuale di notizie tramite Scanner o da Web*

Monitoraggio Periodico

nuove notizie

Sorgenti Online

Costruzione iniziale BD

Banca Dati Tematica Personalizzata di doc. Web (che cresce incrementalmente nel tempo)

Pubblicazione Automatica* (previa validazione opt-in)

Utility (ordinamenti, cartelle, pdf, mail, annotazione*, opt-in*)

Classify

Suddivisione in sottocategorie ed inoltro*

“Dicono di noi…”

Portale Istituzionale

* Servizi Opzionali
PORTAL: a portal for accessing MONITOR services
## List of monitored topics

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<tr>
<th>Profile name</th>
<th>Last monitoring data</th>
<th>Last documents found</th>
<th>Alert</th>
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<tr>
<td>European Funding for R&amp;D in ICT</td>
<td>28/10/2004 11:53</td>
<td>2 documentos (26/10/2004)</td>
<td></td>
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19 Documents about profile CrossCulturalRel

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<th>Source</th>
<th>Marked as</th>
<th>Relevance</th>
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<td>EU-BIJA-USA Trilateral Versammlungen, Europäische Agentur, Konrad-Adenauer-Stiftung e.V.</td>
<td>Motore di ricerca - 28/10/2004 13:22</td>
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<td>⭐⭐</td>
</tr>
<tr>
<td>Residence Palace, International Press Centre, Room Pelako... Member of the Board, Konrad-Adenauer-Stiftung, Berlin... Head of the Institute for International Contact and Cooperation... Chairman, European Institute for Asian Studies, Brussels... Vice-Chairman, European Institute for Asian Studies... Representative of the Dutch Presidency of the European Union... Ambassador of the Republic of L...</td>
<td>Motore di ricerca - 28/10/2004 13:22</td>
<td>Good</td>
<td>⭐⭐</td>
</tr>
<tr>
<td>EU Commissioner for Enterprise and the Information Society Erik O Likanen urged more collaboration as he addressed the Euro-India cooperation forum on the information society on 25 March... So far only one Indian organisation has signed a contract for participation in a project under the information society technologies (IST) section of the Sixth Framework Programme (FP6) I think we can do much...</td>
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<tr>
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<td>⭐⭐⭐⭐</td>
</tr>
<tr>
<td>In order to disseminate the results of the project a digital platform will be accessible through a web interface (including specialized portals, prototypes, etc.)... overcome barriers such as cultural differences, language, geographical distances and time constraints... support an e-learning structure for education activities in online mode... include a job placement system fostering...</td>
<td>Motore di ricerca - 28/10/2004 10:22</td>
<td>Good</td>
<td>⭐⭐⭐⭐</td>
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</tbody>
</table>
19 Documents about profile CrossCulturalRel

Show results
about period: tous sorted by: Date Search words:

1. Title: EU business - Lithuania uses EU-India IST cooperation
   Source: Motore di ricerca - 27/10/2004 15:32
   EU commissioner for Enterprise and the Information Society Erkki Liikanen urged more collaboration as he addressed the Euro-India cooperation forum on the information society on 25 March 2004 ... so far only one Indian organisation has signed a contract for participation in a project under the information society technologies (IST) section of the Sixth Framework Programme (FP6). I think we can do much...

2. Title: ICT for EU-India Cross Cultural Dissemination
   Source: Motore di ricerca - 26/10/2004 10:22
   In order to disseminate the results of the project a digital platform will be accessible through a web interface (including specialized portals, prototypes, etc.)... overcome barriers such as cultural differences, language, geographical distances and time constraints... support an e-learning structure for education activities in on-line mode... include a job placement system fostering cont...
19 Documents about profile CrossCulturalRel

Show results: about period: tutti, sorted by: Date, Search words: 

1. Title: "Business - Liechtenstein India IST cooperation"  
Source: "Motores de ricerca"  
Marked as: Good

2. Title: "ICT for EU-India Cross-Cultural Communication"  
Source: "Motores de ricerca"  
Marked as: Good

3. Title: "Business - Liechtenstein India IST cooperation"  
Source: "Motores de ricerca"  
Marked as: Good
1 Documents about profile CrossCulturalRel

SHOW RESULTS
about period: 27/10/2004 (1)  sorted by: Relevance

Search words:  

Title: EU businesses - Lilaikan urges EU-India IST cooperation
Source: Motore di ricerca - 27/10/2004 10:29

EU Commissioner for Enterprise and the Information Society Erik Liikanen urged more collaboration as he addressed the Euro-India cooperation forum on the information society on 25 March... So far only one Indian organisation has signed a contract for participation in a project under the information society technologies (IST) section of the Sixth Framework Programme (FP6) we think we can do more...
EUBusiness - Liikanen urges EU-India IST cooperation

Skip to content. Search Sections Home Members Documents PressZONE Events Site Map Personal tools You are not logged in Log in Join Home + topics + Re + Liikanen urges EU-India IST cooperation Select Topic Agriculture Chemicals Competition Consumer CSR Employment Euro Energy Environment EU Institutions Facts & Figures Finance Fisheries Food & Drink Health Internet Living+Working Media Pharmaceuticals R&D SMEs Social Telecooms Trade Transport Select Country Austria Belgium Bulgaria Cyprus Czech Republic Croatia Denmark Estonia Finland France Germany Greece Hungary Iceland Ireland Italy Latvia Lithuania Luxembourg Malta Netherlands Norway Poland Portugal Romania Russia Slovakia Slovenia Spain Sweden Switzerland Turkey UK Ukraine Ukraine Services Sines EUFunding Euregios Directory Consultants Law Firms Companies Universities Key Topics SMEs Member States East Europe Euro CSR Help About Us Advertise Disclaimer Privacy - Liikanen urges IST cooperation 27/10/2004

EU Commissioner for Enterprise and the Information Society Erik Liikanen urged more collaboration as he addressed the Euro-India cooperation forum on the information society on 25 March. So far only one Indian organisation has signed a contract for participation in a project under the information society technologies (IST) section of the Sixth Framework Programme (FP6). "I think we can do much better, talking into account India's outstanding strengths in information and communication technologies," said Mr Liikanen.

An opportunity to readdress the imbalance is likely with the publication of the next IST call for proposals. "This content of this call is not yet fully defined but should contain an emphasis on international cooperation," said the Commissioner. He then encouraged the forum's participants to visit the CORDIS web service for further information.

Mr Liikanen blamed the current dearth of links between the EU and India on international mobility issues, which, he said, have been addressed under FP5 and in a recent Commission proposal.

The Commissioner compared the number of Indian researchers in Europe with the number in the US, attributing the lower figure in the EU to language diversity and visa difficulties.

The Sixth Framework Programme's Marie Curie Incoming International Fellowships are aimed at attracting researchers from third countries and funding their stay in the EU for between one and two years. An equivalent is also available to facilitate mobility from the EU to third countries such as India. A new proposal on international mobility is now to be put before the Council. Its principal objective is to remove unnecessary red tape and to pave the way for the free flow of researchers between our respective regions," said Mr Liikanen.

High level participants at the forum were expected to discuss India's participation in the G4net network. The high speed network currently connects over 5,000 research and education institutions in over 30 countries through 28 national and regional networks. The system allows Europe's researchers to share the "embryos of important data" that they produce every day, and, according to Mr Liikanen, without it "many excellent projects at the forefront of their fields would simply not be possible." The Commissioner expressed his confidence that EU-India connectivity could be ensured "quite rapidly."

Finally, Mr Liikanen explained that collaboration with third countries is beneficial for the EU in that it assists the exploitation of research results on a global scale. Declaring that it is also of great value to international partners, the Commissioner declared stronger cooperation as a "genuine win-win situation." Next IST call for proposals Further information on the IST programme - CORDIS site #40nd2004 Co-operation Forum on the Information Society - further information

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Tel. 0432-204444 info@infactory.it - www.infactory.it
In collaborazione con IL CONSORZIO FRUILI INNOVAZIONE
## List of monitored topics

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8644 Documents about profile CrossCulturalRel

Show results
about period: sorted by: Search words

1. Title: "EU-India Economic Cross Cultural Programme / Small Project Facilities... Economic Development (Entrepreneurship, SME Development, Tourism Cultural Heritage...)" The overall objective of the ECOP is to strengthen and enhance civil society links and cross-cultural cooperation between India and the European Union through increased dialogue, information exchange and networking. This will help to encourage and...

2. Title: "Welcome to EU-India : European Union-India Economic Cross Cultural Programme / ENTERIDGE Project" European Union-India Economic Cross Cultural Programme (ENTERIDGE Project): Post-Graduate Diploma in Business Entrepreneurship & Management (PODDEM): Post-Graduate Diploma in Management of NGOs (PGDON)... Amidst a scenario where myriad technological advances, to attain a truly global perspective, are occurring, it is indispensable for the small scale sector to find new markets for their produ...

3. Title: "news story | EU-India Economic Cross Cultural Programme | From the Theatre in Wales web site" The Delegation of the European Commission to India has published a third Call for Proposals for the EU-India Economic Cross Cultural Programme (ECCP). The deadline for submission of proposals is the 3rd June 2004. The key objective of the ECCP is to promote and support links and joint ventures between civil society organisations in India and the European Union in the fields of media, enterpri...

4. Title: "Home"
Mobile access
Some technical aspect

• **Filtering Technology:**
  – Very High precision by combining IFT content-based filtering algorithm with key-word matching and regular expressions
  – High recall, with notification of possible faults
  – Innovation in the matching algorithm: conceptual matching
Conceptual Matching

Matching based on:

• 1. Conceptual Coverage: how much the most relevant conceptual content of the profile is covered in the evaluated doc.

• 2. Match: how much relevant concepts are present in the evaluated doc.

• Rank: a 3-star ranking obtained as a combination of the previous two measures
Some technical aspect/2

• **Construction of a personalized thematic Data Bank:**
  – Build the profile:
    • Definition through: Key words, texts, URLs
    • Refinement through: relevance feedback
  – Meta searching
  – Opportunistic navigation through hyperlinks based on relevance of Web documents against personal profile
Opportunistic Crawling
Notifying candidate faults

2. **Title:** Correlation of blood-glucose control with oxidative metabolites in plasma and vitreous body of diabetic patients
   **Source:** European Journal of Ophthalmology - 01/05/2005 15:46
   **Purpose:** In diabetes hyperglycemia and other mechanisms lead to the production of oxidative metabolites that can enhance the production of growth factors, leading to increased proliferative activity. Strict blood-glucose control reduces the progression of retinopathy better than standard control. This study investigated patients with diabetic retinopathy for evidence of oxidative metabolites.

3. **Title:** The visual results and changes in retinopathy in diabetic patients following cataract surgery
   **Source:** European Journal of Ophthalmology - 01/05/2005 15:46
   **Purpose:** A study was designed to investigate the visual improvement and incidence of progression of retinopathy in diabetic patients following extracapsular cataract extraction or phacoemulsification. They were compared to a matched group of non-diabetic patients. METHODS: A retrospective analysis of all diabetic patients (118) undergoing ECCE (90) or phacoemulsification (28) in 1995. This...

4. **Title:** Macular thickness measured by optical coherence tomography (OCT) in diabetic patients
   **Source:** European Journal of Ophthalmology - 01/05/2005 15:46
   **Purpose:** To compare macular thickness (MT) by optical coherence tomography (OCT) in diabetics and controls; 2) to assess the relationship between MT and stage of diabetic retinopathy (DR) and macular edema (ME); 3) to quantify MT changes after laser treatment for ME. METHODS: One-hundred and thirty-seven patients with diabetes mellitus (216 eyes) were admitted to the study and examined by...

5. **Title:** Intravitreal triamcinolone acetonide injection as primary treatment for diabetic macular edema
Intelligent Platform 2:

ifEXPERT

for Expert Finding
Representing human expertise and searching for it

- Using the same approach of the IFT algorithm for analysing text and matching against profiles
- ‘Competence profiles’ are built (and later updated) by analysing textual information describing personal expertise, projects, papers, and so on
- A ‘premium service’ of the MACSI-net Web site: match-making between requests for experts and an expert data base
- An ‘innovative service’ in the ‘Portale TIROCI NI (Stage Portal)’, a portal for managing stages in industries for university students: match-making between stage requests and student competence & preferences.
www.MACSI.NET.org: a WEB site exploiting the EXPERT platform
SEARCH FORM [FOR SIMPLE USERS]

To search an expert, use together: keywords, free text description and text file description.

we need an engineer in finite elements

NAME: dr. Bernhard Schrefler
E-MAIL: bas@caronte.dic.unipd.it
HOME PAGE: http://www.dic.unipd.it/eng/schrefler/bas.html
ADDRESS: via Marzolo 9 - Padova - Italy
SKILLS: Finite elements
FIELDS OF INTEREST: soil mechanics, structural mechanics, technology for controlled nuclear fusion
URL TALKING ABOUT THIS EXPERT OR HIS/HER JOB: http://www.dic.unipd.it/docenti/schrefler/pub_schrefler.html
http://www.dic.unipd.it/eng/schrefler/bas.html
CURRICULUM: Available, download it here
Portale TIROCINI: a WEB portal exploiting the ifEXPERT match-making capabilities
More than 36,000 Students, with their Competences, credits, preferences
More than 1800 Companies and Public Agencies
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Unstructured information
EXPERT automatically identifies the best matching projects, taking into account unstructured information.
Intelligent Platform 3:

ifMAIL

for Mail Filtering and Antispam

Filtering and Classification of e-mail Messages

• Filtering incoming e-mail messages, discarding the not interesting ones (spam)

• Automatically categorizing messages into user-defined categories of specific interest

• Category profiles are learned automatically, by observing user’s behaviour

• Identifying the most relevant messages and alerting on Mobile devices
| mittente | FAVOT MARIA s48547dvcaa.unipi.it | cartella attuale: **INBOX** |
| data | mer 4/12/02 (16:04) |
| oggetto | prova caratello |

| mittente | Antonio Morassi antonioimo morassi@dic.unipi.it | cartella attuale: **conferenze** |
| data | gio 24/10/02 (12:50) |
| oggetto | AVVISO di SEMINARIO |

| mittente | Umberto Modotti umbi@dimi.unipi.it | cartella attuale: **Bozze** |
| data | lun 16/9/02 (16:50) |
| oggetto | Aggiornamento Secure Shell |

| mittente | Alberto Marcone marcone@dimi.unipi.it | cartella attuale: **note** |
| data | sab 12/7/02 (10:59) |
| oggetto | 1. scuola di logica |

| mittente | Dikran Dikranjan dikranja@dimi.unipi.it | cartella attuale: **INBOX** |
| data | gio 11/7/02 (14:44) |
| oggetto | |

| mittente | Alberto Policriti policriti@dimi.unipi.it | cartella attuale: **conferenze in inglese** |
| data | lun 1/7/02 (17:49) |
| oggetto | avviso di seminario |

| mittente | Alberto Policriti policriti@dimi.unipi.it | |
| data | |
for each message:
- term extraction
- internal representation

matching with profiles associated with categories/folders:
- categorization
- filtering
- alerting about most relevant messages

profile construction, refinement, and evolution:
- implicit relevance feedback
- decay function (rent)
F1 in both operation modes for collection E

- F1 - 'Session' modality
- F1 - 'One-by-one' modality
- moving average (Session)
- moving average (One-by-one)
- Log. (moving average (One-by-one))
- Log. (moving average (Session))
Evaluation over time of users’ vs. system actions (over groups of 60 messages): i.e. how much effort is required from the user
Intelligent Platform 4: myTWM

E-Learning Platform for delivering value-added services to University students
Personalization in the TWM Portal for value-added services to University students

- The TWM portal provides several services for University students
- Several services are supporting learning activities
- The student can personalize the portal and access only to the preferred services, and associate alerting
- Fully XML-SCORM compliant
### Materiale Didattico: corso Sistemi Esperti

Materiale Didattico del corso SISTEMI ESPERTI (Ingegneria della Conoscenza e Sistemi Esperti - ICSE 1)
Docente: CARLO TASSO
Pagina aggiornata al 19/03/2003

#### Scheda del Corso

<table>
<thead>
<tr>
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<td>Introduzione all'Information Access</td>
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#### Checkpoint

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**Note:**
- Sito Web infaFACTORY
- Sito Personalizzazione.it

### Motore Tematico su corso di Sistemi Esperti (ICSE1)

Cerca nel profilo: ATMS

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<td>3</td>
<td>Practical document</td>
<td><a href="http://www.icsi.cs.cmu.edu/Research/areas/knowrep.html">http://www.icsi.cs.cmu.edu/Research/areas/knowrep.html</a></td>
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<td>Truth MAINTENANCE SYSTEMS(TM)</td>
<td><a href="http://www.icsi.cs.cmu.edu/Research/areas/knowrep.html">http://www.icsi.cs.cmu.edu/Research/areas/knowrep.html</a></td>
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**Pagina 1 di 24 - Prev._**
FORUM:
an advanced forum, with personalization and tools for analyzing social interaction in e-learning and knowledge management
## Standard Forum Capabilities

### Forum

- Elenco dei forum disponibili > Nome Forum: Esempio di Forum > Nome Argomento: Esempio di Argomento con voto

### Messaggi

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<tr>
<th>Titolo</th>
<th>Risposta al messaggio di Andrea</th>
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<td>Tosca student</td>
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<td>Data</td>
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<tr>
<td>Allegato</td>
<td>Developing an Asynchronous Learning Network41601.doc</td>
</tr>
<tr>
<td>Voti</td>
<td>🌟🌟🌟🌟 (2 voti)</td>
</tr>
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</table>

**Questo è un messaggio di prova**

1. Questo è un elenco
2. numerato

Questo è un testo con giustificazione a destra

\[ x^2 + y^2 = 1 \]
Rete dello scambio messaggi fra le persone

Indice di coesione: 69%
Centrality measure: discovering ‘leaders’

Centrality Index: 18.0%
PCA and clique analysis: discovering groups
Discovering users that are ‘information bridges’
Exploiting personalization and filtering for proactive Recommendation in e-learning and knowledge management

Current Research

• Personalization in Knowledge Management and e-Learning systems

• Social search, collaborative filtering (Districts of SMEs)

• ‘Personalizing’ the Medicine Library (BIBLIOMED Project)
an initiative of the Artificial Intelligence Laboratory, University of Udine, prof. Carlo Tasso

www.infofactory.it