

Task-based Interaction with an Integrated Multilingual, Multimedia Information System: A Formative Evaluation

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IBM T.J. Watson Research Center



- Government Analysts
 - Track multilingual news
 - Select important information
 - Integrate
 - Summarize for decision-makers
- Task: Humanitarian Aid



Evacuation and Medical Assistance

U.S., Canadian, Australian, and European citizens must be evacuated as a result of the recent armed conflict in Somalia.

You are assisting with evacuation and medical assistance.

Compile sites of recent armed conflict (in the last month) in this area. Your supervisor will use these data to develop evacuation and medical assistance plans.

For each attack you find, place a number on the map and identify:

Location:

Date:

Type of attack:

Number killed/wounded:



Arabic "Linguists"

Domain Expert



English Only

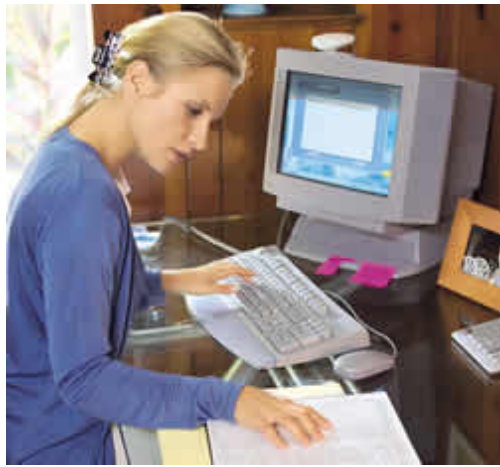
Information Integrator



Chinese "Linguists"

Decision Makers





How old were the wounded?



...六名嫌疑人的年龄在20至30岁之间...

...Liuming xianyiren de nianling
zai ershi zhi sanshi sui zhijian...

This six individual between the ages
of Twenty and 30 years of age
including...

Tasks

- Create a multidocument integrated report
- Current Workflow - Distributed
- New Workflow - End-to-End
 - Multilingual
 - Multimodal

Input:

TV news (video, audio)



...六名嫌疑人的年齡在20至30岁之間...



in London in northern Luton arrested one person



this six individuals at the age of Twenty to 30 between the ages including

Output:

English translation associated with frames



He last year in Birmingham at a public activities in ... once interrupted the Internal Affairs Minister Erlitou speech and openly questioned Reid

☒ video ☐ web - ☒ Arabic ☒ Chinese ☒ Spanish ☒ English - 2007 Apr 16 - 2007 May 16 last 30 days File Tools Options Help

Search


My Notes History Bookmark Help

Search Input: **Terrorist arrest* London**

Search

Sort by: [rank](#) | [date](#) | in order 21 results << 1 2 3 >>

Query Options: [mediatype](#)=(video) [lang](#)=(Arabic Chinese Spanish English) [date-range](#)=(within last 30 days from 20070416 till 20070516)

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PhoenixInfo 2007/04/25 01:16:00 GMT **Chinese**



Summary: ... British police this anti terrorism action in the morning local time five points about a total of six suspects **arrested** Among **London** Tai Po Yan in **London** in northern Luton **arrested** one person this six individuals at the age of ... Albania matron medical team has support **terrorist** activities allegations At present these **terrorist** suspects are in custody in **London** 's Paddington police suspected to the suspects with soliciting overseas to carry out **terrorist** activities for **terrorist** funds the **London** police spokesman said this **arrest** operation is a police in the long as part of the investigation and the relevant search ...

Title: WorldNews | **Duration:** 120 secs


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Al_Arabiya 2007/04/24 16:16:00 GMT **Arabic**



Summary: welcome you British police announced they **arrested** six people during raids that alive in the West and East **London** in ... the police spokesman said Scotland Yard it suspected in the establishment of six men incitement to commit **terrorist** acts abroad house of the financing of terrorism reported several television networks British in the preparation of the Abu Ezz Eddin who is suspected that the former on behalf of the movement of outsiders extremist emanating from the group of immigrants which ... month following the detention of Iran Fifteen element of the British navy ...

Title: News | **Duration:** 120 secs


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Al Arabiya 7/4/30 18:14:00 GMT Arabic



Summary: Sadique Khan enlightenment They two of executors of **London** attacks **terrorist** Police extended the Supreme Court activities and documentation about ... was **arrested** in his country coincided with the American attention Mohammed Babar boarding On the basis that relieve the against ... question unanswered Why is not intentionally British intelligence bodies to intervene to try to derailing the process of seven **terrorist** here in **London** Drums of knowledge clear connects seven cell cell July chemical bombs entry of Arab before the Supreme Court since from **London** with US political analyst Shamseddin Shamseddin Shamseddin heard the question Antoine Khoury ...

Title: News | **Duration:** 120 secs

 [storyboard](#) [annotate](#) [play](#) [download it](#) [view stories](#)

Al_Arabiya 2007/04/30 22:18:00 GMT Arabic



Summary: in secret hearings took place during the trial. the intelligence organs was watched the cell between Britain and Pakistan to the beginning of the Year 2004 during control retirement tents four times Mohammed Sadique Khan the They two of executors of **London** attacks **terrorist** Police extended the Supreme ... Canadian accent of but Khawaja was **arrested** in his country coincided with the American attention Mohammed Babar On the basis ... try to frustrate operations seven **terrorist** here in **London**

Drums of knowledge clear ...

Title: News | **Duration:** 120 secs

Biography

Input a Name: **John Reid (UK Politician)**

Get Biography

Start Over

Legend

Biography for 'John Reid (UK politician)':

Basic Information

NAME/Alias: **reid, john_reid**

Occupations: **leader, health secretary, chairman, minister, health_minister, member, lord_chancellor, cabinet_minister, senior, reporter, official**

19 supporting documents

Health secretary

Life Events

Organizations associated with: **member of cabinet**, member of house_of_commons_foreign_relations_committee, manager of house_of_commons, chairman of labor_party, leader of house_of_commons

COMMUNICATION Events: **reid on 'saddam_hussein', reid on 'bbc_radio', reid on 'the_times_of_london', reid say bbc_radio, reid say british_broadcasting_corp., reid on 'house_of_commons', reid on 'george_galloway', reid on 'bbc', reid on 'britain', reid on 'labor_party', reid on 'british_broadcasting_corp.', minister say reid, minister say reid, reid on 'tony_blair', reid say daily_telegraph, reid**

Text

Bookmark

Annotate

Citation

Detach

-

Prev Result

Next Result

1



Provider: Associated Press **Date:** 2003-06-13 GMT **Lang:** English

Keywords:

Falconer said the new Department of Constitutional Affairs would try to set up a Supreme Court within the next three years , and responsibility for management of the courts , legal aid , data protection and human rights .

He said the Home Office would continue to have responsibility for police matters .

Blair 's Cabinet shuffle also included the appointment of a new health secretary , John Reid , following the resignation of Alan D

Controlled Variables

- Training approach
- Tasks
- Languages
- Collections
- System features

Participants

- 15 users
 - 12 information studies graduate students
 - 2 practicing librarians
 - 1 history Ph.D. student (a domain expert)
- 6 observers
 - 1 information studies Ph.D. student
 - 4 information studies graduate students
 - 1 speech sciences graduate student

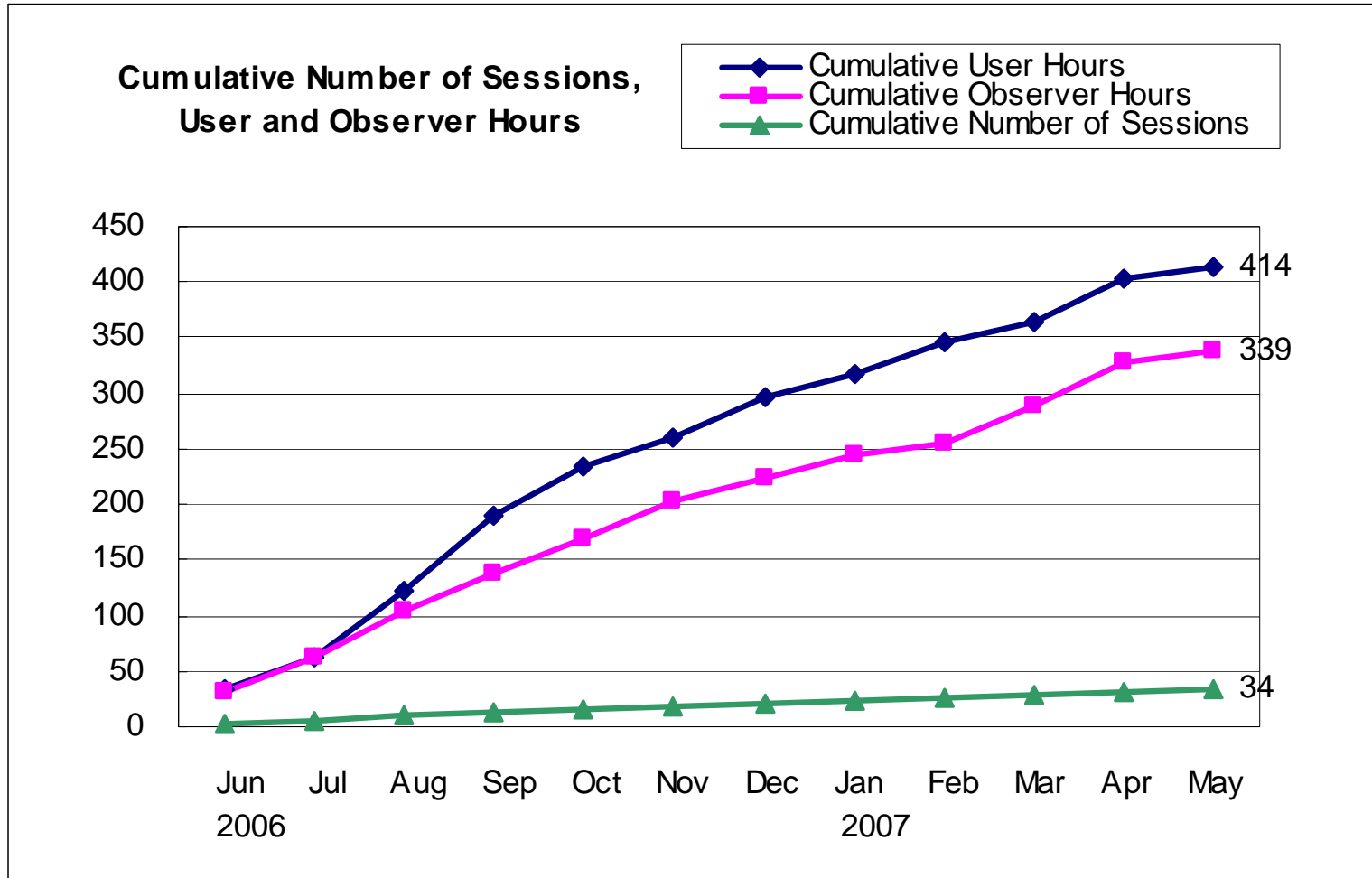
Why This Group?

- Target users: trained analysts performing complex tasks
- Surrogate users: students with formal training in search techniques
- Both groups are familiar with:
 - Information gathering
 - Synthesizing data
 - Assessing credibility
 - Evaluating claims based on supporting evidence

Study Design

- Three-hour experimental sessions
 - N-users = 3-8
 - N-observers = 3-5
- 33 user sessions from 6/2006 – 5/2007
- Ongoing collaboration with University of Pittsburgh and Carnegie Mellon

Timeline



Data from June 2, 2006 to May 9, 2007

Procedure and Conditions

- **Training**
 - Inductive, deductive
 - Degrees of explicitness
 - Placement and length of hands-on experience
- **Users and Observers**
- **Debrief**
 - Reaction paper
 - Post-Search Questionnaire and Interview

Findings

1. User Adaptation
2. Novel Ways to Use Video
 - Fact vs. Opinion
3. User Interest in “under-the-hood”

Findings: Adaptation

1. Started broadly for Named Entities
 - Example: Turkey vs. Dogubeyzait
 - High probability vs. low probability terms
2. Compensated for translation problems
 - Users recognized common mistranslations
 - Changed their query
 - “Iran nuclear **program**” for “Iran nuclear **file**”

Findings: Use of Video

Task:

"man-on-the-street"
opinions about the
trials and sentence of
Saddam Hussein.

"it is the best news in
my life, but I cannot
assume the sentence
is fair or not."

"it is fair because
Saddam committed
many crimes..."

The screenshot shows a Windows Internet Explorer browser window with the address bar displaying a URL from rosetta.ibm.com. The page is titled 'Task: {SADDAMTRIAL2} -- Username: {user21}'. The search bar contains 'saddam trial' and shows 11989 results. The 'Storyboard' section displays a list of video clips with thumbnails and subtitles. The subtitles are in Arabic and mention 'Saddam Hussein' and 'trial'. A large video player on the right shows a man speaking. The browser's status bar at the bottom indicates 'Done' and 'Internet'.

Log: 2007/01/23 14:44:00.868 - startsid = -1 endsid = -1

Findings: User's Curiosity

- Wanted to know about what was “under the hood”
- Needed explanation on how system worked
- More satisfied with system transparency



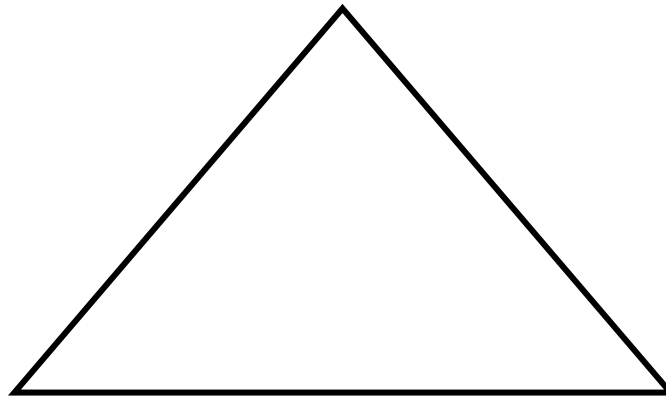
"DON'T GET SMART WITH ME!"

Contributions

Methodologies: Transferable to other Projects

Researchers:

*Understanding the
Process



System Designers:

*Fast Feedback
*Importance of User Input

Managers:

*Training Users to
Maximize Technologies

- Zhang, Plettenberg, Klavans, Oard, Soergel.

“Task-based Interaction with an Integrated Multilingual, Multimedia Information System: A Formative Evaluation” (to appear) JCDL 2007

- Supported by DARPA – GALE to UMIACS

Any Questions?