

UCD for Interactive Info Access

Тенденции в дизайне
интерфейсов для интерактивного
доступа к информации

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Outline

- UI Trends in Desktop Search Strategies
 - Improving search function access
 - Mimicking application UI
 - Actionable Search
 - Search-as-you-type
 - Organizing VS finding information
 - *Unsolved problems*
- User-Centered design for interactive GIS
 - Chicken-and-egg problem

Improving Search Access

The image is a collage of screenshots from Microsoft Office applications, illustrating search capabilities and security vulnerabilities. The screenshots include:

- Find and Replace dialog:** A red box highlights the "Find what:" field, labeled "X1 controls".
- Basic File Search dialog:** A red box highlights the "Search text:" field, labeled "X1 controls".
- Document1 Properties dialog:** A red box highlights the "Custom X1 controls" field, with a red arrow pointing to it. A red note at the bottom states: "Possible to hack into the standard dialogs that are not in the Object Model".
- Microsoft Outlook:** A screenshot of the HP Laser email interface, showing a list of emails and a detailed view of an email from "customerservice@compuplus.com". A red box highlights the "X1 Controls" field in the email header.

Mimicking UI

Search [Clear](#)
ano

Refine [Clear](#)

☒ Also search in attachments

Subject:

From:

To:

Date: Any

Importance: Any

Folder: Any

My Searches [Add](#)

[Today's emails](#)
[Yesterday's emails](#)
[High importance emails](#)

326 matching documents Standard | Date

- Date: Yesterday**
 - WoodsACMQueu... Gardne... 3/25/2...
 - WoodsACMQueu... Gardne... 3/25/2...
- Date: Last week**
 - Good article on A... Volzer, ... 3/20/2...
 - Customize your e... Keane ... 3/20/2...
- Date: Two weeks ago**
 - Use this 10% off ... United ... 3/15/2...
 - RE: UIE Tips: Imp... Verma, ... 3/14/2...
 - TALK:Monday 4-2... seminar... 3/13/2...**
 - Re: [CHI-CONSU... ACM SI... 3/12/2...
 - Re: [CHI-CONSU... ACM SI... 3/12/2...
 - [CHI-CONSULTA... ACM SI... 3/12/2...
 - RE: UIE Tips: Imp... Branso... 3/12/2...
 - RE: UIE Tips: Imp... To: NA... 3/12/2...
 - RE: UIE Tips: Imp... To: NA... 3/12/2...
- Date: Three weeks ago**
 - Welcome to Chris... Kneram... 3/8/20...
 - Goldstar Events ... Goldsta... 3/7/20...
 - RE: RE: Endeca ... Janovs... 3/5/20...
 - RE: RE: Endeca ... To: Jan... 3/5/20...
 - RE: RE: Endeca ... Janovs... 3/5/20...
 - RE: Endeca conta... To: Jan... 3/5/20...
- Date: Earlier this month**
 - Welcome to Sama... Kneram... 3/2/20...
 - Which Service Pr... Saved... 3/2/20...

TALK:Monday 4-23-07 Buffer Overflows and Group Signature...
Date: 3/13/2007 12:52:51 PM **Folder:** imap.csail.mit.edu\Inbox
From: seminars-bounces@lists.csail.mit.edu
To: seminars@csail.mit.edu

Find: ano [Open Message](#) [Print](#) [Reply](#) [Forward](#) >>

EECS Special Seminar
 CS Special Seminar Series Spring 2007
 Speaker: Dr. Hovav Shacham
 Speaker Affiliation: Weizmann Institute of Science
 Host: Profs. Liskov and Micali
 Host Affiliation: MIT EECS

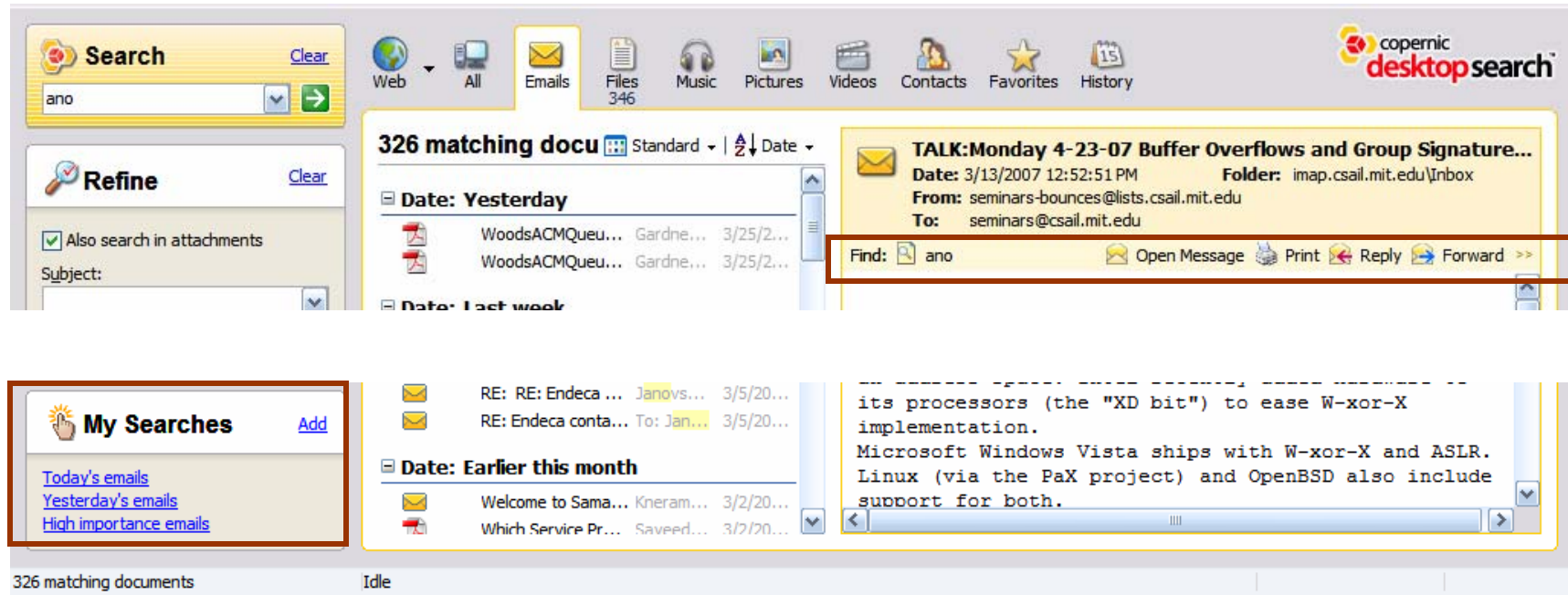
Date: 4-23-2007
 Time: 4:00 PM - 5:00 PM
 Refreshments: 3:45 PM
 Location: 32-G449

"Buffer Overflows and Group Signatures: Recent Results in Security and Cryptography"

We analyze the effectiveness of two techniques intended to make it harder for attackers to exploit vulnerable programs: W-xor-X and ASLR. W-xor-X marks all writable locations in a process' address space nonexecutable. ASLR randomizes the locations of the stack, heap, and executable code in an address space. Intel recently added hardware to its processors (the "XD bit") to ease W-xor-X implementation. Microsoft Windows Vista ships with W-xor-X and ASLR. Linux (via the PaX project) and OpenBSD also include support for both.

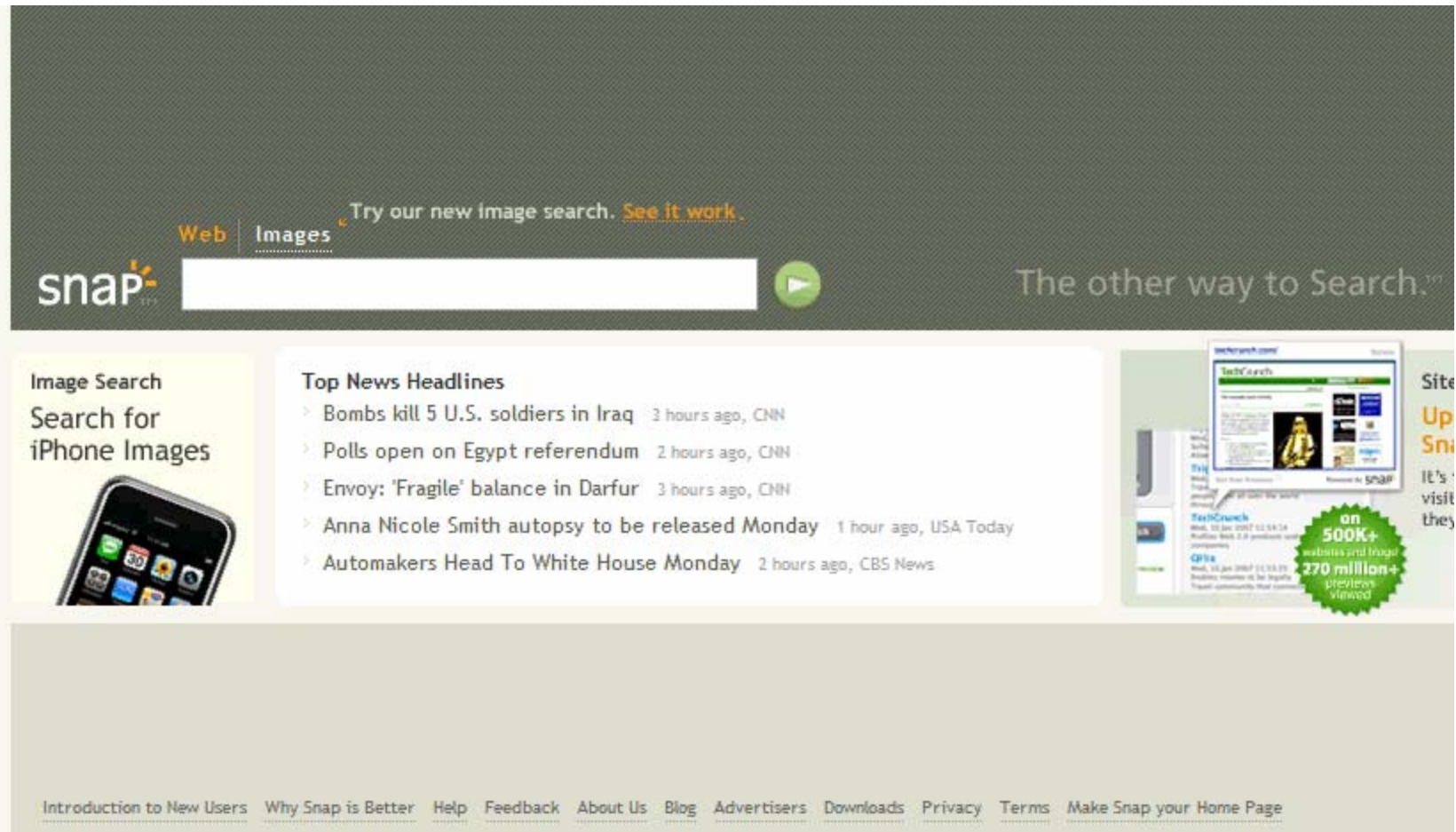
326 matching documents Idle

Actionable Search



- Affinity to mimic the functionality UI of an application
- Saved searches
 - Alerting mechanism
 - Portal-like functions

Search-as-you-type



- New UX: interactive narrow-down of results
- Challenges: advanced search queries

Organizing VS Finding

SEAMARK NAVIGATOR

Search Entire Collection for in All Fields Find Log Out

[Software](#) [Services](#) [Solutions](#) [Customers](#) [Company](#) [Support](#)

947 items

The partner is interested in finding BPM technical notes from last year. Seamark provides the partner a "Bird's Eye" view of all the items that are related to Business Process Management.

by Publish Date

This Month	766
This Year	112
Last Year	69

by Location

Americas	313
EMEA	537
Asian-Pacific	97

by Product

Business Optimization	188
Business Process Management	211

Sort results by: < Previous Results 1-5 of 947 Next >

☐ Tag All All 947 matching items using: Add Tag Remove Tag

☐ **Business Article for our OEM Program product line in Austin, as of 11 May 2006**
[Click to view](#)
Location: [Austin](#)
Product: [OEM Program](#)
Organization: Channel Partners
This resource is available for your view. It is a business article about our OEM Program product line. It is produced by our Channel Partners organization for, in particular, our customers located in Austin. This latest version was published on 11 May 2006.
[Tag it](#)

☐ **Users Guide for our Business Optimization product line in Germany, as of 11 May 2006**
[Click to view](#)
Location: [Germany](#)

Latest Trends and Unsolved Problems

- Search is not limited to a desktop
 - Federated search – remote file shares & internet
 - Collaboration platforms
- Tighter integration with the OS and applications
 - Search as an attribute functionality
- Organizing semi-structured data
 - Automated tagging according to what users do
 - Search term expansion
 - Custom ranking
 - Facet navigation
- Using social/distributed intelligence
 - “others have also looked at this”
 - Documenting best practices
 - Retention of corporate knowledge
 - Enabling information sharing
- Data management
 - Eliminating redundant data

Touch-free GeoCollaborative HCI



- Gesture primitives combined with speech grammar
- Adoptive multimodal scheme
- Dialogue management
- Collaborative interaction

Bootstrapping HCI

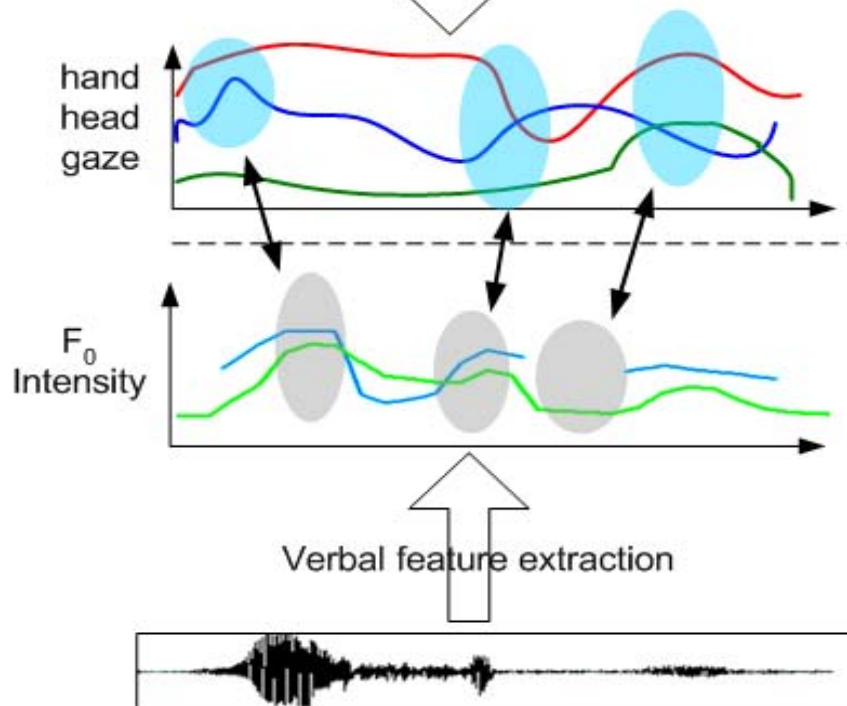


- Understanding natural communication
 - Unconstrained by interactive feedback
 - Trained individuals: less random hand movement, uninterrupted narration
 - Virtually unlimited data
- ➞ Improving recognition technologies
 - Redundancy of multimodal expressions

Multimodal Analysis



Non-verbal feature extraction



Verbal feature extraction

Extract meaningful correlation between multiple modalities

- More difficult than closely coupled modalities- audio-visual speech recognition

Prosody-based framework

- Find meaningful prosodic events
 - Velocity of movement
 - Intonational and loudness variations, pauses
- Time between the events

Deictic Gesture Recognition

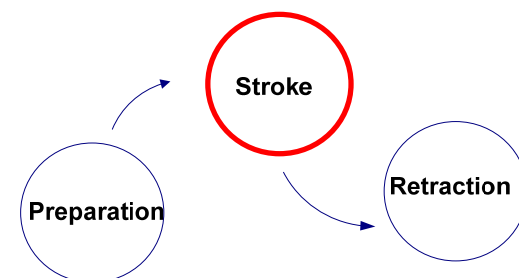
Improving recognition:

- Preparation – Point
- Retraction- Contour

➔ Strokes aligned with intonational accents

➔ Auxiliary gestures do not exhibit such pattern

➔ 12% improvement HMM



Scaling Interaction Models



- Interface constraints
 - Language patterns
 - Simplified
 - Gesture patterns
 - No compounded gestures
 - Easier to recognize
 - Multimodal Patterns
 - Lose synchronization – no reliable time-based synchronization
 - Sequential patterns (before, after)
 - Mental load
 - High
 - Affordances considerations
 - Cumbersome pen interface
 - Graphical resolution
 - Collaboration
 - Less synchronous



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