Alias-i ThreatTrackersTM

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ABSTRACT

Alias-i ThreatTrackers are an advanced information access application designed around the needs of analysts working through a large daily data feed. ThreatTrackers help analysts decompose an information gathering topic like the unfolding political situation in Iraq into specifications including people, places, organizations and relationships. These specifications are then used to collect and browse information on a daily basis. The nearest related technologies are information retrieval (search engines), document categorization, information extraction and named entity detection.ThreatTrackers are currently being used in the Total Information Awareness program.

Keywords

Search, coreference, anaphora, information access.

1. Description of Demo

Alias-i ThreatTrackers are an advanced information access application designed around the needs of analysts working through a large daily data feed. ThreatTrackers help analysts decompose an information gathering topic like the unfolding political situation in Iraq into specifications including people, places, organizations and relationships. These specifications are then used to collect and browse information on a daily basis. The nearest related technologies are information retrieval (search engines), document categorization, information extraction and named entity detection. ThreatTrackers are currently being used in the Total Information Awareness program.

ThreatTrackers have two major components, first is a mentally natural organization of a data feed we call Cognitive Indexing(tm), and second, a user interface which combines data triage, browsing and ThreatTracker authoring.

2. Cognitive IndexingTM

Cognitive Indexing organizes text data feeds into mentally natural units like people, events, things, organizations and relationships. For example, the Cognitive Indexing Fig. 1 ThreatTracker Top Level Interface

representation for an Entity like Osama bin Laden contains pointers to all sentences in the data feed that mention him Fig 4, including spelling variation (i.e. Usama) and pronouns which refer to him. In future versions of the system, the Cognitive Indexing representation of Osama will include audio mentions of him as well as database entries for him. In addition to coreference, Cognitive Indexing supports standard key word lookup, relationship detection between entities and analyst authored classes of Entities.

3. ThreatTracker Interface

The ThreatTracker interface provides complete analyst control over what is in a ThreatTracker, and provides multiple views into the collected data. Included are sentence excerpt summaries, tables of relationships between Entities and easy access to original source documents. There is also a redundant information filter on documents or sentences. ThreatTrackers allow analysts to create new categories of Entities like "Chemical Weapons Precursors " for use inside ThreatTrackers. Once created, ThreatTrackers serve as a form of information triage against the data feed.

4. Acknowledgements

We would like to acknowledge the assistance of Mitre Corp. in providing the data feed for the product as well as many analysts who lent input to the design. This research has been funded under the TIDES program.

aliaso	Today 🖌 Se	earch Alias I
Alias I Threat Tracker		Mon Jan 20 12:53:13 200
Tracker Home 🗲		
Infectious Diseases		Return to This View
Terrorist Suspects		from any Screen
Iraqi Chem Weapons Programs		
Iraq Movers and Shakers	List of Existing	
Iraq Opposition	ThreatTrackers	
Sectarian Violence in India		
Pakistani Islamic Opposition		
Kashmir		
Saudi Movers and Shakers		
New /	Create New	

🗿 Tracker View - Alias I, Inc - Microsof	t Internet Explorer		×
<u>File Edit View Favorites Tools Help</u>			2
List of People selected for Tracking, increase /decrease and doc cour	Today V Seal Rename Tracker		
Alias I Threat Tracker Tracker Home Terrorist Suspects	Terrorist Suspects - Remove Modify	Mon Jan 20 13:42:37 2003 Entity name	
Osama bin Laden ← 13 Khalfan Khamis Moham ← + 2	Displaying 1 to 10 of 19 documents.		
Mustafa Mohamed Fadh 🔸 👘 1	<u>US Embassy Bombing Convicts Demand a Fre</u>		
Tariq Anwar al Sayyi -1 Rappani Khalilov 1	The media reported possible misconduct by solv of the jurors The fo involvement in the 1998 embassy bombing are asking for a new trial d misconduct by some members of the jury that decided their fets. A me	ue to reports of possible	
Equil Abdulleb Mohern 1 Lead Paragraphs from docs which mention Tracked Entities	Court. The attorney's also complain about conditions in the	on title to diced ntire doc. for 'hot' docs	
Abdallah Al Jarash Abd Al Rahim	US embassy bombing convicts demand a fresh By KEVIN J KELLEY New York Thefour men convicted of involvemen bombing are asking for a new trial due to reports of possible miscond	nt in the 1998 embassy uct by some members of	>

Fig.2 View of Individual ThreatTracker on Terrorist Suspects



Fig. 3 Association Table view of Entities in the same sentence as Osama bin Laden.

🕙 Entity View - Alias I, Inc Mic	rosoft Internet Explorer Pronoun reference	×
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools	Help to bin Laden	17
Abdel Basset Ali Al Abdelkarim Hussein M Abdelkarim Hussein M Abdelmajid Dahoumane Abdulaziz Alomari Abdullah Ahmed Abdul Abdul Bahman Yasin <u>Abdul Spelling variation in</u>	Some see Saddam as a man, who was narratified by the UZ like many in the world inbluding the now infamous Osama bin Lader, to scheve their own objectives Some even go to the then of pulling out of the Kingdom, exactly what Osama bin Lader and the theologians around him have been proposing. Dawn - Mon Jan 20 01:20:58 2003 Terror Suspects Arrested in London Mosque 11, during which radical Muslimspraised Osama bin Lader and the amention bin Lader	
Abu referenct to bin Ahm Laden Ahmed Alghamdi -	Why this helplessness? Everyone says (with some justification, of course) that Islam needs reform and that the Arab educational system is a thisoelest, in effect, a school for religious fanatics and <u>suicide</u> bombers funded not just by crazy inams and their wealthy followers (tipe) or ana bin Lader) but also by governments	
Ahmed Alnami -	which are the supposed allies of the <u>United States</u> .	
Ahmed Ibrahim A A1 H	Dawn - Mon Jan 20 01:21:02 2003	
Ahmed Khalfan Ghaila 🔸	Kenya: Usamah Bin-Laden poses "bigger threat" than Iraq's Husayn	
Ahmed Mohammed Hamed		
Aldam Tilao -	Usamah Bin Ladinis still at large and scheming and conniving to commit more atrocities. Any rational person would expect Mr Bushto have gone after Mr Bin Ladin, the North Koreansand Saddam	
Ali Atwa -	Husaynin that order.	
Ali El Hoorie -	FBIS@fbis.org- Sun Jan 19 01:01:01 2003	~

Fig. 4 Excerpt Summary for Osama Bin Laden