

US007826665B2

(12) United States Patent

Bressan et al.

(54) PERSONAL INFORMATION RETRIEVAL USING KNOWLEDGE BASES FOR OPTICAL CHARACTER RECOGNITION CORRECTION

- (75) Inventors: Marco Bressan, La Tronche (FR);
 Hervé Dejean, Grenoble (FR);
 Christopher R. Dance, Meylan (FR)
- (73) Assignee: Xerox Corporation, Norwalk, CT (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1254 days.
- (21) Appl. No.: 11/299,453
- (22) Filed: Dec. 12, 2005

(65) **Prior Publication Data**

US 2007/0133874 A1 Jun. 14, 2007

- (51) Int. Cl. *G06K 9/00* (2006.01)
- (52) U.S. Cl. 382/181; 382/186; 382/187

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

5,483,052	A	1/1996	Smith, III et al.
	A	2/1997	Zipf et al
5,754,671	A *	5/1998	Higgins et al
5,850,480	A	12/1998	Scanlon
6,783,060	B2	8/2004	Marappan
6,823,084	B2	11/2004	Myers et al.
7,120,302	B1 *	10/2006	Billester 382/229
2001/0044324	A1	11/2001	Carayiannis et al.

(10) Patent No.: US 7,826,665 B2

(45) **Date of Patent:** Nov. 2, 2010

2002/0131636	A1 $*$	9/2002	Hou 382/181
2002/0191847	A1	12/2002	Newman et al.
2003/0069877	Al	4/2003	Grefenstette et al.
2003/0086615	A1	5/2003	Dance et al.
2005/0086205	Al	4/2005	Franciosa et al.
2005/0086224	A1	4/2005	Franciosa et al.

FOREIGN PATENT DOCUMENTS

DE	10104270	8/2002
GB	2392290	2/2004

OTHER PUBLICATIONS

Kilgarriff et al., "Introduction to the Special Issue on the Web as Corpus," Computational Linguistics, vol. 29, No. 3, pp. 333-347, (2003).

Handley et al., "Document Understanding System Using Stochastic Context-Free Grammars," pp. 5.

(Continued)

Primary Examiner—Samir A. Ahmed Assistant Examiner—Edward Park (74) Attorney, Agent, or Firm—Fay Sharpe LLP

(57) ABSTRACT

In a system for updating a contacts database (42, 46), a portable imager (12) acquires a digital business card image (10). An image segmenter (16) extracts text image segments from the digital business card image. An optical character recognizer (OCR) (26) generates one or more textual content candidates for each text image segment. A scoring processor (36)scores each textual content candidate based on results of database queries respective to the textual content candidates. A content selector (38) selects a textual content candidate for each text image segment based at least on the assigned scores. An interface (50) is configured to update the contacts list based on the selected textual content candidates.

15 Claims, 3 Drawing Sheets



Find authenticated court documents without watermarks at docketalarm.com.

OTHER PUBLICATIONS

Strohmaier et al., "Lexical Postcorrection of OCR-Results: The web as a Dynamic Secondary Dictionary?," pp. 5.

Martins et al., "Spelling Correction for Search Engine Queries," pp. 12.

Xerox, "Xerox Document Imaging Technology Changes the Way People Communicate," Public Relations Department, France, pp. 2, (2004).

Katsuyama et al., "Highy Accurate Retrieval of Japanese Document Images Through a Combination ...," Proc SPIE vol. 2670, pp. 57-67, (2002).

Saiga et al., "An OCR System for Business Cards," IEEE Comput. Soc., pp. 802-805, 1993.

Likforman-Sulem et al., "Proper Names Extraction from Fax Images Combining Textual and Image Features," IEEE, pp. 545-549, 2003.

Luo et al., "Design and implementation of a card reader based on build-in camera," IEEE, vol. 1, pp. 417-420, 2004.

* cited by examiner

 Θ

R

Δ



Find authenticated court documents without watermarks at <u>docketalarm.com</u>.







Α



CKET LARM Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

