



- (51) International Patent Classification:  
*G06F 17/30* (2006.01)
- (21) International Application Number:  
PCT/US2013/072502
- (22) International Filing Date:  
29 November 2013 (29.11.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
13/688,209 29 November 2012 (29.11.2012) US
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

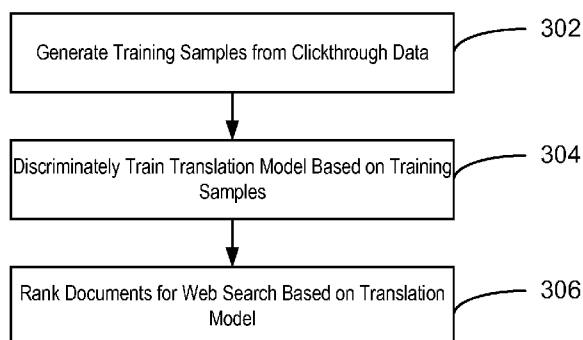
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: WEB SEARCH RANKING



(57) Abstract: A computer-implemented method and system for Web search ranking are provided herein. The method includes generating a number of training samples from click-through data, wherein the training samples include positive query-document pairs and negative query-document pairs. The method also includes discriminatively training a translation model based on the training samples and ranking a number of documents for a Web search based on the translation model.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**Published:**

- *with international search report (Art. 21(3))*

**(88) Date of publication of the international search report:**

17 July 2014

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2013/072502

A. CLASSIFICATION OF SUBJECT MATTER  
INV. G06F17/30  
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/313286 A1 (MISHRA NINA [US] ET AL) 17 December 2009 (2009-12-17) paragraphs [0002] - [0007], [0023] - [0026], [0031], [0032], [0042], [0043], [0046], [0054]; claims 1,6,8,17; figures 1,2	1-15
X	US 2012/143789 A1 (WANG GANG [CN] ET AL) 7 June 2012 (2012-06-07) paragraphs [0002], [0003], [0005], [0008], [0020] - [0022], [0025] - [0028], [0043] - [0050], [0090]; figure 1  ----- -/--	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

21 May 2014

Date of mailing of the international search report

28/05/2014

Name and mailing address of the ISA/

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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2013/072502

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	THORSTEN JOACHIMS: "Optimizing search engines using clickthrough data", PROCEEDINGS OF THE EIGHTH ACM SIGKDD INTERNATIONAL CONFERENCE ON KNOWLEDGE DISCOVERY AND DATA MINING, KDD '02, 1 January 2002 (2002-01-01), page 133, XP055038616, New York, New York, USA DOI: 10.1145/775047.775067 ISBN: 978-1-58-113567-1 section 4 and 4.1 on page 136, left column -----	3,10-12
A	SIMON CARTER ET AL: "Syntactic discriminative language model rerankers for statistical machine translation", MACHINE TRANSLATION, KLUWER ACADEMIC PUBLISHERS, DO, vol. 25, no. 4, 1 September 2011 (2011-09-01), pages 317-339, XP019978465, ISSN: 1573-0573, DOI: 10.1007/S10590-011-9108-7 section 4 on pages 9 and 10 -----	4,7

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2013/072502

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009313286	A1	17-12-2009	NONE
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US 2012143789	A1	07-06-2012	CN 102542003 A 04-07-2012
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