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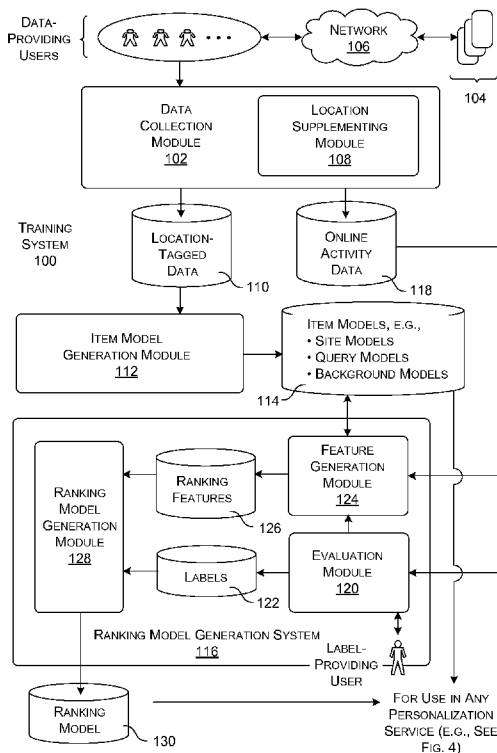
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[Continued on next page]

(54) Title: USING AGGREGATE LOCATION METADATA TO PROVIDE A PERSONALIZED SERVICE



(57) Abstract: Functionality is described herein which generates a plurality of item models based on the aggregate behavior of users, such as the aggregate behavior of the users in selecting network-accessible sites and/or issuing particular queries. In one implementation, each item model estimates a probabilistic distribution of locations for an individual, given that the individual selects a particular item (e.g., a particular site or query). The functionality can use the item models to provide a personalized service to an end user. For example, in one scenario, the functionality can generate a plurality of location-based features based on the item models. The functionality can then learn a ranking model based on the location-based features. In a real-time phase of operation, a query processing system uses the ranking model to personalize search results for an end user.

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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, ML, MR, NE, SN, TD, TG).

— *as to the applicant's entitlement to claim the priority of
the earlier application (Rule 4.17(iii))*

Published:

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

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

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A. CLASSIFICATION OF SUBJECT MATTER*G06F 17/00(2006.01)i, G06F 17/30(2006.01)i, G06F 17/40(2006.01)i, G06Q 50/10(2012.01)i*

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 17/00; G06F 7/00; G06F 17/30

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

tag data, query, site, item model, probabilistic distribution, data store

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7287029 B1 (DANIEL H. CRAFT et al.) 23 October 2007 See column 2, lines 19-30; column 3, lines 38-64; column 9, line 42 - column 10, line 16; claim 1 and figures 1,11B.	1-10
A	US 7599950 B2 (WALTHER ECKART et al.) 06 October 2009 See column 8, lines 25-67; column 9, lines 14-19 and figure 2.	1-10
A	WO 2011-003232 A1 (GOOGLE INC. et al.) 13 January 2011 See paragraphs 10-13,66-68; claims 1,5 and figures 7A,7B,7C.	1-10
A	US 2007-0083483 A1 (SHILPA S. LAWANDE) 12 April 2007 See paragraphs 39-45; claim 1 and figures 2,3.	1-10

 Further documents are listed in the continuation of Box C. See patent family annex.

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"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/041796

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7287029 B1	23.10.2007	None	
US 7599950 B2	06.10.2009	CN 1934569 A EP 1725957 A1 JP 2007-529824 A JP 2010-146595 A JP 2011-216100 A KR 10-0905865 B1 KR 10-0905866 B1 KR 10-2006-0132722 A KR 10-2008-0044921 A KR 10-2010-0081364 A KR 10-2012-0014059 A US 2005-0216457 A1 US 7685209 B1 WO 2005-091175 A1	21.03.2007 29.11.2006 25.10.2007 01.07.2010 27.10.2011 02.07.2009 03.07.2009 21.12.2006 21.05.2008 14.07.2010 15.02.2012 29.09.2005 23.03.2010 29.09.2005
WO 2011-003232 A1	13.01.2011	None	
US 2007-0083483 A1	12.04.2007	US 7634457 B2	15.12.2009