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Search 2: natural language input (Results 0)
Search 3: natural language input (Results 406)
Search 4: 3 and incomplete (Results 9)
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Search 14: natural language (Results 9328)
Search 15: "natural language" (Results 9328)
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Search 18: 15 and incomplete (Results 90)
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Search 24: 23 and input (Results 24)
Search 25: 24 and predict* (Results 6)
Search 26: 25 and n-gram (Results 1)
Search 27: n-gram (Results 1301)
Search 28: 27 and language (Results 659)
Search 29: 28 and incomplete and natural (Results 3)

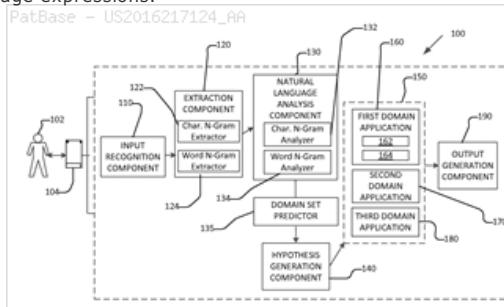
Title: METHODS FOR UNDERSTANDING INCOMPLETE NATURAL LANGUAGE QUERY

Abstract: Source: US2016217124A Analysis of incomplete natural language expressions using n-gram analysis and contextual information allows one or more domains to be predicted. For each domain, intent a likely intent of the user is determined using n-gram analysis and contextual information. Intent may correspond to functions of a domain application. In such a case, information required for the functions to execute the application may be populated using n-gram analysis and/or contextual information. The application may then be presented to the user for confirmation of intent. Confirmation of intent along with the incomplete natural language expression and contextual information may then be used to train one or more models used to predict user intent based on incomplete natural language expressions.

Classifications:**International (IPC 8-9):** G06F G06F17/27

G10L15/18 (Advanced/Invention);

G06F17/30 (Advanced/Non-invention)

CPC: G06F17/276 G06F17/2715 G06F17/2765 G10L15/18**US:** 704/9**Family:**

Publication number	Publication date	Application number	Application date
AU2016209220 AA	20160728	AU20160209220	20160122
CA2970733 AA	20170612	CA20162970733	20160122
CN107533542 A	20180102	CN201680005437	20160122
CO20170007037 A2	20170929	CO20170007037	20170713
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PH2017550014 A	20171018	PH20170550014	20170524
SG11201705699U A1	20170830	SG20171105699	20160122
US2016217124 AA	20160728	US20150622119	20150213
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WO16118794 A1	20160728	WO2016US14409	20160122

Priority:

US20150107213P 20150123

US20150622119 20150213

WO2016US14409 20160122

Probable Assignee: MICROSOFT TECHNOLOGY LICENSING LLC**Assignee(s):** (std): MICROSOFT TECH LICENSING LLC ; MICROSOFT TECHNOLOGY LICENSING LLC**Assignee(s):** SARIKAYA RUHI ; DEREK LIU XIAOHU**Inventor(s):** (std): RUHI SARIKAYA ; XIAOHU DEREK LIU ; SARIKAYA RUHI ; LIU XIAOHU DEREK ; DEREK LIU XIAOHU**Agent(s):** DAVIES COLLISON CAVE PTY LTD; SMART AND BIGGAR; LUZ HELENA ADARVE GOMEZ; GODDAR HEINZ J; MERCHANT AND GOULD PC; MINHAS SANDIP ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: PRESENTATION OF DATA BASED ON USER INPUT

Abstract: Source: US2004176954A A method of rendering information to a user based on a voice query as provided. The method includes identifying a first object and a second object from an utterance of speech. The first object and the second object are associated with tags that correspond to stored information. The stored information is selectively rendered based on the first object and the second object.

Classifications:

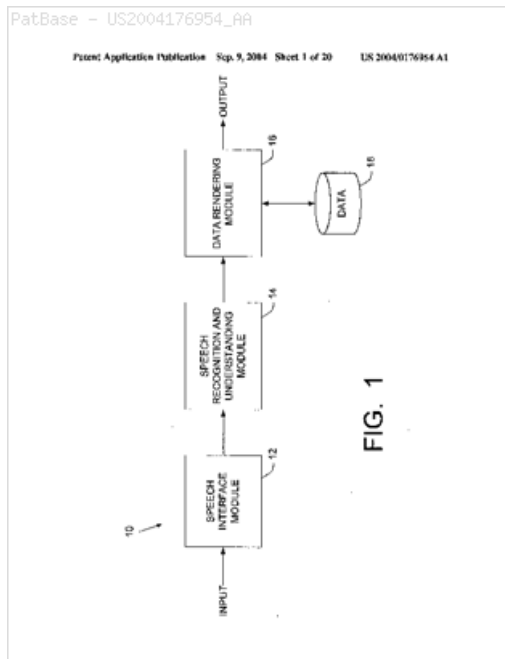
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G07F17/20 G09B5/06 G10L13/00 G10L15/00 G10L15/04 G10L15/08
G10L15/22 G10L15/26 G11C7/00 (Advanced/Invention);
G10L15/22 G10L15/26 (Advanced/Non-invention);
A63F13/00 A63F13/10 G06F13/16 G06F17/00 G06F17/27 G06F17/30
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G06F G10L (Subclass/Invention)

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CPC: Y10S707/99933 G06F3/16 G06F17/30896 G10L15/26

European: G06F17/30W7S G06F3/16 S10L15/26

US: 704/254 704/254P 704/260 704/275 707/3 707/999.003
707/E17.118 707/E17.118S



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Publication number	Publication date	Application number	Application date
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Priority:

CA20042459030 20040226 US20030382121 20030305

Probable Assignee: MICROSOFT TECHNOLOGY LICENSING LLC

Assignee(s): (std): MICROSOFT CORP

Assignee(s): MICROSOFT TECHNOLOGY LICENSING LLC ; WANG KUANSAN ; MAJKROSOFT KORPOREJSHN

Inventor(s): (std): VANG KUANSAN ; WANG KANSAN ; WANG KUAN SAN ; WANG KUANSAN ; KUANSAN WANG

Inventor(s): N N ; KUAN SAN WANG

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; SMART AND BIGGAR; VILLASECA;
DARIO CARDENAS NAVAS; ABE KAZUO; TANI YOSHIKAZU; WESTMAN CHAMPLIN AND KELLY PA;
CONG TY TNHH LE AND LE

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

Search history

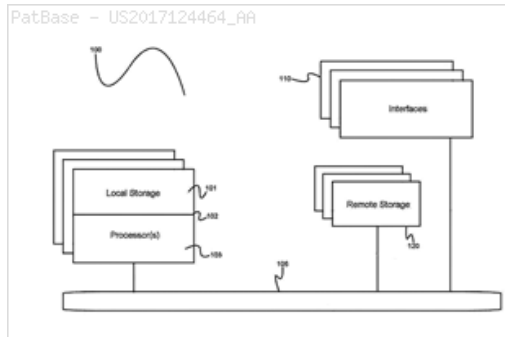
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Title: RAPID PREDICTIVE ANALYSIS OF VERY LARGE DATA SETS USING THE DISTRIBUTED COMPUTATIONAL GRAPH

Abstract: Source: US2017124464A A system for predictive analysis of very large data sets using a distributed computational graph has been developed. Data receipt software receives streaming data from one or more sources. In a batch data pathway, data formalization software formats input data for storage. A batch event analysis server inspects stored data for trends, situations, or knowledge. Aggregated data is passed to message handler software. System sanity software receives status information from message handler and optimizes system performance. In the streaming pathway, transformation pipeline software manipulates the data stream, provides results back to the system, receives directives from the system sanity and retrain software.

Classifications:

International (IPC 8-9): G06F15/18 G06F17/00 G06F17/30 G06F17/50 G06F21/55 G06F21/57 G06F9/54 G06N5/02 G06N5/04 G06N7/00 G06N99/00 G06Q10/06 G06Q30/02 G06Q40/04 G06Q40/06 G06Q40/08 H04L12/26 H04L12/70 H04L12/741 H04L29/00 H04L29/06 H04L29/08 H04W28/02 (Advanced/Invention); G06Q40/02 (Advanced/Non-invention)
CPC: G06N5/04 G06Q10/06375 G06F17/30958 G06F17/30551 G06F17/30867 G06F17/30554 H04L63/0807 G06Q10/063 G06F17/30241 G06F17/3028 G06F17/30265 G06Q10/067 G06Q10/0635 G06Q40/06 G06Q40/04 G06N7/005 G06F17/5009 G06Q40/08 H04L43/04 G06F9/54 H04L43/12 H04L67/10 H04L63/1416 H04L63/1425 G06Q10/00 H04L41/145 G06F17/30864 G06F17/30887 H04L67/02 H04L45/74 H04L63/20 G06F2221/2111 G06F9/544 G06F17/30333 G06F17/30592 G06F17/30516 H04L67/12 H04L63/1433 G06Q30/0201 H04L67/1004 G06Q10/0637 G06Q30/0202 G06N99/005 G06F17/30539 H04L63/145 G06Q40/02 G06F9/46 H04L63/1441 G06N5/022 G06F15/18 G06Q10/06



Family:

Publication number	Publication date	Application number	Application date
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Priority:

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Probable Assignee: FRACTAL IND INC

Assignee(s): (std): FRACTAL IND INC

Inventor(s): (std): CRABTREE JASON ; SELLERS ANDREW ; UCHIYAMA JOHN ; MACLEOD IAN ; ISMAIL RAVEEM ; BOROLE ANANT ; AMIN BHARAT

Agent(s): GALVIN BRIAN R

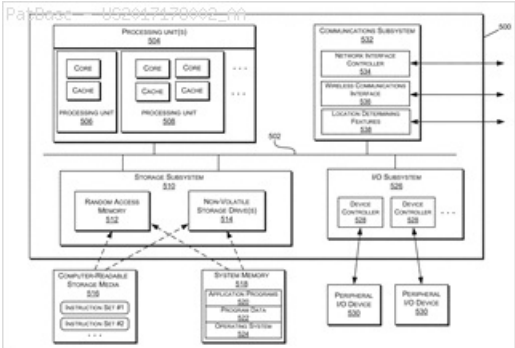
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Title: SYSTEM AND METHOD FOR CONTENT PROVISIONING WITH DUAL RECOMMENDATION ENGINES

Abstract: Source: US2017178002A Systems and methods for content selection with first and second recommendation engines are disclosed herein. The system can include a memory include a content library database and a model database. The system can include a user device having a first network interface and a first I/O subsystem. The system can include one or more servers that can include a packet selection system and a presentation system. These one or more servers can: receive response data from the user device; provide received response data to a first recommendation engine; alert a second recommendation engine when a selected next node is a placeholder node; retrieve at least one statistical model relevant to selection of next node content; and select next node content based on an output of the at least one statistical model.

Classifications:

International (ipc 8-9): G06F17/00 G06F17/27 G06F17/28 G06F17/30 G06F3/0484 G06N3/02 G06N3/08 G06N5/00 G06N5/02 G06N5/04 G06N99/00 G06Q30/00 G06Q30/02 G06Q30/06 G06Q50/20 G09B19/00 G09B5/00 G09B5/02 G09B7/00 H04L12/24 H04L12/26 H04L12/407 H04L12/743 H04L29/08 H04W4/18 H04W4/20 (Advanced/Invention)
CPC: G06N5/02 H04L67/22 G06F17/30539 G06F17/30489 G06F17/30528 G06F17/30625 G06F17/30684 G06F17/30696 G06F17/271 G06Q30/02 G06N5/003 G06Q30/0269 G06N99/005 G06F17/30702 G06N3/02 G06Q30/0224 G06N5/04 G06F17/30867 H04L67/1097 H04W4/18 H04W4/206 H04L41/5051 H04L41/145 H04L45/7457 H04L12/407 H04L67/322 H04L67/306 H04L67/146 H04L43/16 G06Q30/06 G06Q30/00 H04L67/18 G06F17/20 H04L12/4641 G06F17/2229 G06F17/241 G06F17/2755 G06F17/2765 G09B5/00



Family:

Publication number	Publication date	Application number	Application date
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Priority:

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Probable Assignee: PEARSON EDUCATION INC

Assignee(s): (std): MCALLISTER ANGIE ; MCFALL GREG ; MORIARTY BRIAN ; PEARSON EDUCATION INC

Inventor(s): (std): DEMICHELE MARK ; HELLMAN SCOTT ; MCALLISTER ANGELA ; MCALLISTER ANGIE ; MCFALL GREG ; MORIARTY BRIAN ; MURRAY WILLIAM ; NOBLE JACOB SMITH ; OROS LUIS MANUEL ; PARIS KELLY LYNN ; POTTER MARK ; SABITINI PETER ALEXANDER ; SADAUSKAS JR JOHN PAUL ; STEWART TIM ; STRONG DAVID ; STRONG DAVID WILLIAM ; TIBBETTS FRED ; YORK SEAN

Agent(s): CHRISTIANSEN RICHARD B ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHODS FOR UNDERSTANDING INCOMPLETE NATURAL LANGUAGE QUERY

Abstract: Source: US2016217124A Analysis of incomplete natural language expressions using n-gram analysis and contextual information allows one or more domains to be predicted. For each domain, intent a likely intent of the user is determined using n-gram analysis and contextual information. Intent may correspond to functions of a domain application. In such a case, information required for the functions to execute the application may be populated using n-gram analysis and/or contextual information. The application may then be presented to the user for confirmation of intent. Confirmation of intent along with the incomplete natural language expression and contextual information may then be used to train one or more models used to predict user intent based on incomplete natural language expressions.

Classifications:

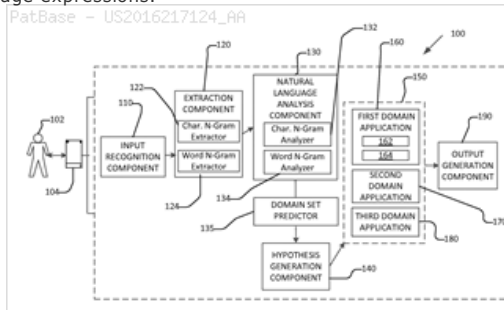
International (IPC 8-9): G06F G06F17/27

G10L15/18 (Advanced/Invention);

G06F17/30 (Advanced/Non-invention)

CPC: G06F17/276 G06F17/2715 G06F17/2765 G10L15/18

US: 704/9



Family:

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Priority:

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WO2016US14409 20160122

Probable Assignee: MICROSOFT TECHNOLOGY LICENSING LLC

Assignee(s): (std): MICROSOFT TECH LICENSING LLC ; MICROSOFT TECHNOLOGY LICENSING LLC

Assignee(s): SARIKAYA RUHI ; DEREK LIU XIAOHU

Inventor(s): (std): RUHI SARIKAYA ; XIAOHU DEREK LIU ; SARIKAYA RUHI ; LIU XIAOHU DEREK ; DEREK LIU XIAOHU

Agent(s): DAVIES COLLISON CAVE PTY LTD; SMART AND BIGGAR; LUZ HELENA ADARVE GOMEZ; GODDAR HEINZ J; MERCHANT AND GOULD PC; MINHAS SANDIP ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: Menu-based natural language understanding system

Abstract: Source: US4829423A A natural language interface for a computer system restricts inputs from a user to those which generate valid input sentences. The user selects a next input word from a menu showing which words are valid. When an input is selected, a parser uses a predefined grammar to determine which words are valid continuations after the selected word, and whether a complete sentence has been entered. Valid next words are presented to the user in menu form so that a next selection can be made. If an ambiguous complete sentence is entered, the interface allows the user to select the desired meaning therefor. The grammar can be context free grammar, and can use an associated lexicon to define elements therein.

Classifications:

International (IPC 8-9): G06F15/00 G06F17/21 G06F17/27
G06F17/30 G06F3/023 G06F3/048 G06F9/45
H03M11/04 (Advanced/Invention);
G06F15/00 G06F17/21 G06F17/27 G06F17/30 G06F3/023 G06F3/048
G06F9/45 H03M11/04 (Core/Invention)

International (IPC 1-7): G06F1/00 G06F15/40 G06F3/02 G06F3/023
G06F3/037 G06F9/44 G06F9/45 H03M11/04

CPC: G06F3/0489 G06F17/274 G06F17/30401 G06F17/3097
G06F17/30976

European: G06F17/27G G06F17/30H4 G06F17/30S4F7
G06F17/30Z2F1 G06F17/30Z2F4 G06F3/023A G06F3/0489

US: 364/200 700/83 704/8 707/E17.137 707/E17.139

PatBase - US4829423_R

NLMENU interface Baseball demo--(Version LM2)			
actions	items	attributes	modifiers
Find Insert	batters pitchers name	(specific batter named) (specific batter named) (specific pitcher named)	whose batter name is whose batter name is whose pitcher name is
batting average	(specific batter) (specific pitcher)	(specific pitcher named) (specific pitcher named)	whose pitcher name is whose pitcher name is
games played	(specific batter) (to new batter) (to new pitcher)	(specific pitcher named) (specific pitcher named) (specific team named)	whose pitcher name is whose team name is whose team name is
in game	(to new pitcher)	(specific team named)	whose team name is
runs	(to new team)	(specific team named)	whose team name is
double		(specific number)	whose individual batting average is
triple			whose batter games played is
home runs			whose batter or team is
HRs			whose batter runs is
wins	win/loss greater than less than		whose batter wins is whose batter losses is
losses	greater than or equal to less than or equal to equal to		whose batter losses is whose batter wins is
ERA			whose pitcher ERA is
games pitched			whose pitcher games pitched is
complete games			whose pitcher complete games is
injured pitcher			whose pitcher injured is
has given up			whose pitcher has given up is
hits			
strikeouts			
saves			
commands			
Re-start Refresh	Quit Save Q	Retrieve Q	Delete Q Exit system Play Q
Query			
Number of parses: 1			
[PRINTLN RETRIEVE BATTER WHERE (GT HOMERUNS 20) GIVING BATTER IN "OUTPUT WINDOW"]			
Display window			

Family:

Publication number	Publication date	Application number	Application date
DE3486349 D1	19941020	DE19843486349	19840127
DE3486349 T2	19950119	DE19843486349T	19840127
EP0118187 A1	19840912	EP19840300515	19840127
EP0118187 B1	19940914	EP19840300515	19840127
JP1625194 C3	19911118	JP19840011137	19840126
JP2052292 B4	19901113	JP19840011137	19840126
JP59176823 A2	19841006	JP19840011137	19840126
US4829423 A	19890509	US19870035276	19870403

Priority:

US19830462151 19830128 US19860898875 19860821 US19870035276 19870403

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