505194614 11/16/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5241383

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
KANSTANTSYN ZORYN	06/30/2014
ZHIMIN CHEN	07/07/2014
KAUSHIK CHAKRABARTI	07/01/2014
JAMES P. FINNIGAN	07/01/2014
VIVEK R. NARASAYYA	07/03/2014
SURAJIT CHAUDHURI	06/30/2014
KRIS GANJAM	06/30/2014

RECEIVING PARTY DATA

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Street Address:	ONE MICROSOFT WAY	
City:	REDMOND	
State/Country:	WASHINGTON	
Postal Code:	98052	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16188210

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Correspondent Name: RAY QUINNEY & NEBEKER

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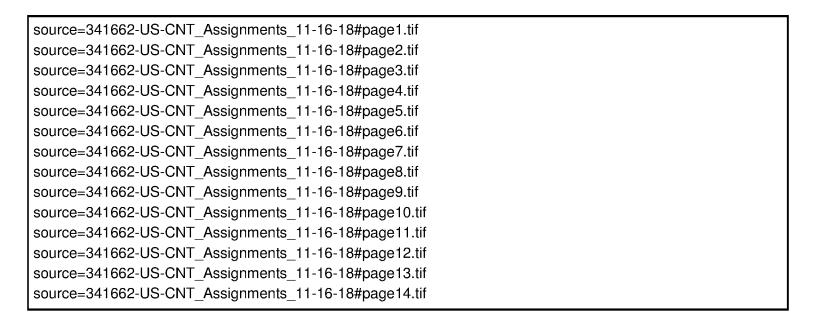
Address Line 4: SALT LAKE CITY, UTAH 84111

ATTORNEY DOCKET NUMBER:	341662-US-CNT	
NAME OF SUBMITTER:	THOMAS M. HARDMAN	
SIGNATURE:	/Thomas M. Hardman/	
DATE SIGNED:	11/16/2018	

Total Attachments: 14

PATENT REEL: 047525 FRAME: 0623

505194614



PATENT REEL: 047525 FRAME: 0624

I <u>Kanstantsyn Zoryn</u> ("ASSIGNOR") am the original inventor or an original joint

MS Docket No.: 341662.01

inventor of subject matter ("INVENTIO	N") disclosed and/or claimed in a patent
application entitled "COMPUTING FEATUI	<u>RES OF STRUCTURED DATA</u> " ("APPLICATION"),
which.	

Ø	will be filed. ASSIGNOR hereby	y authorizes, and requests
	ASSIGNEE'S legal representatives, of	the Law and Corporate Affair
	Department, Microsoft Corporation,	One Microsoft Way, Redmond
	Washington 98052 (ASSIGNEE'S LEGA	AL REPRESENTATIVES), to inser
	here in parentheses (filed on]	fuly 8, 2014 and give
	Application No. 14/325,376	by the following
	Office U.S. Patent Office) this APPLICATION'
	Application No., filing date, and Office	ce, when known;
Ш	was filed on and was	s given Application
	No by the followin	g Office
	a 7,	

Microsoft Corporation, a Washington Corporation, on behalf of itself and its successors and assigns ("ASSIGNEE"), is entitled to, and is desirous of acquiring, the entire and exclusive rights, title and interest in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S LEGAL REPRESENTATIVES to insert the Application No., filing date, and Office into the following table for any APPLICATION DERIVATIVES after they are known;

Application No.	Filing Date	
16/188,210	November 12, 2018	United States Patent and Trademark Office

Page 1 of 2

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For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, ASSIGNOR's entire and exclusive rights, title and interest in the INVENTION and the APPLICATION (and APPLICATION DERIVATIVES):

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

2-74-	06/30/2014
Inventor's Signature	Date
Kanstantsyn Zoryn	Константин Зорин
Printed Name in English	Printed Name in Native Language
	(if other than English)

MS Docket No.: 341662.01

I Zhimin Chen ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "RANKING TABLES FOR KEYWORD SEARCH" ("APPLICATION"), which: will be filed. ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S legal representatives, of the Law and Corporate Affairs Department, Microsoft Corporation, One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S LEGAL REPRESENTATIVES), to insert here in parentheses (filed on July 8, 2014 and given 14/325,376 **Application** No. bv the following Office <u>U.S. Patent Office</u>) this APPLICATION's Application No., filing date, and Office, when known; \square was filed on _____ and was given Application No _____ by the following Office

Microsoft Corporation, a Washington Corporation, on behalf of itself and its successors and assigns ("ASSIGNEE"), is entitled to, and is desirous of acquiring, the entire and exclusive rights, title and interest in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

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16/188,210	November 12, 2018	United States Patent and Trademark Office

Page 1 of 2

MS Docket No.: 350112.01

PATENT ASSIGNMENT MS Docket No.: 350112.01

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	*
Zhinin den	7/7/2014
Inventor's Signature	Date
Zhimin Chen	
Printed Name in English	Printed Name in Native Language
	(if other than English)

PATENT ASSIGNMENT MS Docket No.: 350112.01

I <u>Kaushik Chakrabarti</u> ("A inventor of subject matter (application entitled " <u>RANKING T</u>	"INVENTION") disclosed	•
ASSIGNEE'S legal of Department, Micro Washington 9805 here in parenth Application No Office <u>U.S. Pater</u>	ASSIGNOR hereby authorepresentatives, of the Law osoft Corporation, One Mice (ASSIGNEE'S LEGAL REPRESES (filed on July 8, 2 p. 14/325,376 at Office	w and Corporate Affairs icrosoft Way, Redmond, ESENTATIVES), to insert 014 and given by the following) this APPLICATION's
	and was given by the following Office ";	
successors and assigns ("ASSIC entire and exclusive rights, titl (and all other applications a applications, in and for the L ("APPLICATION DERIVATIVES"));	GNEE"), is entitled to, and le and interest in the INV and patents derived the United States, its territori	ENTION and the APPLICATION erefrom, such as continuing ies, and all foreign countries uests, ASSIGNEE'S LEGAL
following table for any APPLICA		=
Application No. 16/188,210	Filing Date November 12, 2018	Office United States Patent and Trademark Office

Page 1 of 2

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Kanhil habrill	7/1/2014
Inventor's Signature	Date
Kaushik Chakrabarti	
Printed Name in English	Printed Name in Native Language (if other than English)

MS Docket No.: <u>350112.01</u>

MS Docket No.: 350112.01

nal inventor or an original joint

1 <u>Jame</u>	<u>:s P. Finnigan</u> ("/	ASSIGNOR") a	ım the origi	nal invent	or or an ori	ginal joint
inventor of	subject matter	("INVENTION	ا") discloseه	d and/or	claimed in	a patent
application e	ntitled " <u>RANKING</u>	TABLES FOR	KEYWORD S	<u>EARCH</u> " ("/	APPLICATION	l"), which:

\boxtimes	will be filed.	ASSIGNOR	hereby	authorize	s, and	requests,
	ASSIGNEE'S lega	l representati	ves, of th	ne Law and	Corpo	rate Affairs
	Department, Mic	rosoft Corpo	ration, O	ne Microso	oft Way	, Redmond,
	Washington 980	52 (ASSIGNEE	'S LEGAL	REPRESEN	TATIVE	S), to insert
	here in parent	heses (filed:	on <u>Ju</u>	ly 8, 2014		and given
	Application I	No. <u>14/32</u>	5,376	_ by	the	following
	Office <u>U.S. Pa</u>	tent Office) th	s APP	LICATION's
	Application No.,	filing date, a	nd Office	, when kno	wn;	
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	***************************************	***************************************				

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Inventor's Signature

Date

James P. Finnigan

Printed Name in English

Printed Name in Native Language

MS Docket No.: 350112.01

(if other than English)

I <u>Vivek R. Narasayya</u> ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "RANKING TABLES FOR KEYWORD SEARCH" ("APPLICATION"), which: will be filed. ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S legal representatives, of the Law and Corporate Affairs Department, Microsoft Corporation, One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S LEGAL REPRESENTATIVES), to insert here in parentheses (filed on July 8, 2014 and given 14/325,376 **Application** No. bv the following Office <u>U.S. Patent Office</u>) this APPLICATION's Application No., filing date, and Office, when known; \square was filed on _____ and was given Application No _____ by the following Office

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MS Docket No.: 350112.01

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N.R. WW	
	0 <u>3 July 2014</u>
Inventor's Signature	Date
Vivek R. Narasayya	
Printed Name in English	Printed Name in Native Language (if other than English)

MS Docket No.: <u>350112.01</u>

I <u>Surajit Chaudhuri</u> ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "<u>RANKING TABLES FOR KEYWORD SEARCH</u>" ("APPLICATION"), which:

\boxtimes	will	be	filed.	ASSI	GNOR	heret	y autho	orizes,	and	requests	5
	ASSI	GNE	E'S leg	al repre	sentati	ves, of	f the Law	and C	orpor	ate Affair	5
	Depa	artm	ent, M	icrosoft	Corpo	ration,	One Mi	crosoft	: Way,	Redmond	5
	Wasl	hing	ton 98	052 (AS	SIGNEE	'S LEG	AL REPRI	ESENTA	NTIVES), to inser	t
	here	in	pare	ntheses	(filed	on _	July 8, 20	14		and give	n
	Appl	icati	on	No.	14/32	5,376	k	y 1	the	following	3
	Offic	ce _	U.S. Pa	atent Off	ice)	this	APPL	ICATION'	S
	Appl	licati	on No	., filing	date, a	nd Off	ice, wher	ı know	'n;		
	was	filed	on		ĉ	and wa	s given /	Applica	ıtion		
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	u					".					

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	<u> </u>
and the state of t	6/30/2014
Inventor's Signature	Date
Surajit Chaudhuri	
Printed Name in English	Printed Name in Native Language
	(if other than English)

I Kris Ganjam ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "RANKING TABLES FOR KEYWORD SEARCH" ("APPLICATION"), which: will be filed. ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S legal representatives, of the Law and Corporate Affairs Department, Microsoft Corporation, One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S LEGAL REPRESENTATIVES), to insert here in parentheses (filed on <u>July 8, 2014</u> and given 14/325,376 Application No. by the following Office <u>U.S. Patent Office</u>) this APPLICATION's Application No., filing date, and Office, when known: was filed on _____ and was given Application No ______ by the following Office

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Page 1 of 2

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Luca -	6/30/2014
Inventor's Signature	Date
Kris Ganjam	
Printed Name in English	Printed Name in Native Language
*	(if other than English)