504769233 02/08/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4815961

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CAGRI OZCAGLAR	01/12/2018
XIANREN WU	01/16/2018
JAEWON YANG	01/16/2018
ABHISHEK GUPTA	01/17/2018
ANISH RAMDAS NAIR	01/22/2018

RECEIVING PARTY DATA

Name:	MICROSOFT TECHNOLOGY LICENSING, LLC
Street Address:	ONE MICROSOFT WAY
City:	REDMOND
State/Country:	WASHINGTON
Postal Code:	98052

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15826279

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.

Email: request@slwip.com

Correspondent Name: SCHWEGMAN LUNDBERG & WOESSNER, P.A.

Address Line 1: P.O. BOX 2938

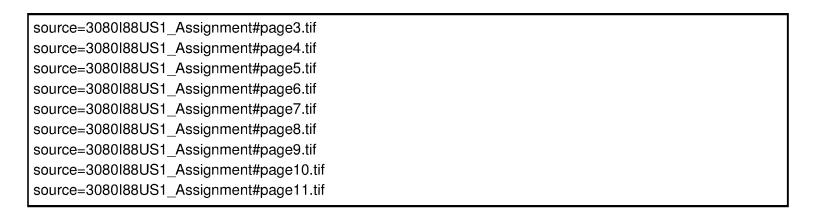
Address Line 4: MINNEAPOLIS, MINNESOTA 55402

ATTORNEY DOCKET NUMBER:	902044-US-NP 3080.I88US1
NAME OF SUBMITTER:	TAMERAE ROBINSON
SIGNATURE:	/Tamerae Robinson/
DATE SIGNED:	02/08/2018

Total Attachments: 11

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PATENT REEL: 044868 FRAME: 0111



PATENT REEL: 044868 FRAME: 0112

RECORDATION FORM COVER SHEET PATENTS ONLY

Atty Ref/Docket No.: 902044-US-NP (3080,I88US1) Patent and Trademark Office To the Director of the U.S. Patent and Trademark Office: Please record the attached original documents or copy thereof. Name and address of receiving party(ies): 1. Name of conveying party(ies): Name: Microsoft Technology Licensing, LLC Cagri Ozcaglar, Xianren Wu, Jaewon Yang, Abhishek Gupta, Anish Ramdas Nair Street Address: One Microsoft Way City: Redmond State: WA Zip Country: United States of America Additional name(s) of conveying party(ies) attached? Zip: <u>98052</u> []Yes [X]No Additional name(s) & address(es) attached? []Yes [X]No 3. Nature of conveyance: [X] Assignment [] Merger [] Security Agreement[] Change of Name [] Other Execution Date: <u>January 12, 2018, January 16, 2018, January 16, 2018, January 17, 2018, January 22, 2018</u> 4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application is: A. Patent Application No.(s) B. Patent No.(s) Serial No. 15/826,279 Additional numbers attached? []Yes [X]No 6. Total number of applications and patents involved: 1 5. Name and address of party to whom correspondence 7. Total fee (37 CFR 3.41):\$ 0.00 concerning document should be mailed: Name: Jonathan D. Hanish [[Enclosed [Authorized to be charged to deposit account Address: 19-0743 Schwegman Lundberg & Woessner, P.A. P.O. Box 2938 8. Please charge any additional fees or credit any over Minneapolis, Minnesota 55402--0938 payments to our Deposit Account No.: 19-0743 DO NOT USE THIS SPACE Statement and signature. To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. February 2, 2018 /Jonathan D. Hanish/ Jonathan D. Hanish/Reg. No. 57,821 Name of Person Signing Signature Date Total number of pages including cover sheet: 11

Mail documents to be recorded with required cover sheet information to: Commissioner of Patents and Trademarks Mail Stop Assignment Recordation Services P.O. Box 1450

Alexandria, VA 22313-1450

PATENT REEL: 044868 FRAME: 0113

of subject matter ("INVENTION") "GENERALIZED LINEAR MIXED M	disclosed and/or c ODELS FOR IMPRO\	**	entitled
ASSIGNEE'S legal LLC, One Microsof LEGAL REPRESENT on	representative, Mir t Way, Redmond, V FATIVES), to inser and given App	crosoft Technology Licensin Vashington 98052 (ASSIGNEE t here in parentheses (file Ilication No.	g, 'S ed oy
APPLICATION's Ap	plication No., filing) th date, and Office, when know	
15/826,279 by the Microsoft Technology Lid behalf of itself and its successor of acquiring, the entire and expriority, in the INVENTION and derived therefrom, such as confunited States, its territories, and	e following Office " censing, LLC, a Was clusive rights, title the APPLICATION (a tinuing application d all foreign countr fizes, and requests, filling date, and Of	hington limited liability com IGNEE"), is entitled to, and is and interest, including the and all other applications and is, in whole or in part, in an ies ("APPLICATION DERIVATIV ASSIGNEE'S LEGAL REPRESEN	desirous right of I patents I for the (ES"));
Application No.	Filing Date	Office	

MS Docket No.: 902044-US-NP

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, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("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).

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		01/12/2018	
	Inventor's Signature	Date State	,:
	Cagri Ozcaglar		
	Printed Name in Engli	ish Printed Name in Native Language	
		(if other than English)	

l Yiani	an Wu ("ASSICNOD"	am the original inventor o	or an original joint inventor of
		-	a patent application entitled
•		DDELS FOR IMPROVING SEA	• • •
Coloni Vinet V. Vinet darke	D ENGLYNC WINCED IVIC	DELES I OR SIME NOVING SE	att , with the
	ASSIGNEE'S legal r LLC, One Microsoft LEGAL REPRESENT on the following Of	ASSIGNOR hereby authorepresentative, Microsoft Way, Redmond, Washingt ATIVES), to insert here and given Application ffice	Technology Licensing, on 98052 (ASSIGNEE'S in parentheses (filed Noby) this
		<u>nber 29, 2017</u> and was giv following Office " <u>US Pater</u>	
behalf of itse of acquiring, priority, in the derived there United States	If and its successors, the entire and exc ne INVENTION and the efrom, such as cont s, its territories, and	s and assigns ("ASSIGNEE"), clusive rights, title and in he APPLICATION (and all o inuing applications, in wh all foreign countries ("APF	limited liability company, on is entitled to, and is desirous terest, including the right of ther applications and patents ole or in part, in and for the PLICATION DERIVATIVES"));
	•	•	EE'S LEGAL REPRESENTATIVES
			the following table for any
APPLICATION	I DERIVATIVES after	tney are known;	
Application	No.	Filing Date	Office

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby acknowledged ASSIGNOR's entire and exclusive rights, title and interest, including the right of priority, and and and the AFFLICATION (and all other applications and patents derived liherefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES").

//CiCNON agrees to execute all instruments and documents required for the making and prosecution or the AFFLICATION (and AFFLICATION UCRIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and reviewing title to the AFFLICATION (and AFFLICATION INTERIOR).

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iiXianren Wa	2 21-
Printed Name in English	Printed Name in Native Language
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l Jaew	on Yang ("ASSIGNOF	R") am the original invento	r or an original joint inventor
•		disclosed and/or claimed in DDELS FOR IMPROVING SEA	n a patent application entitled <u>\RCH</u> ", which:
	ASSIGNEE'S legal r LLC, One Microsoft LEGAL REPRESENT on the following Of	ASSIGNOR hereby authorepresentative, Microsoft Way, Redmond, Washingt ATIVES), to insert here and given Application ffice	Technology Licensing, on 98052 (ASSIGNEE'S in parentheses (filed Noby) this
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behalf of itse of acquiring, priority, in the derived there	If and its successors the entire and exc ne INVENTION and the efrom, such as cont	s and assigns ("ASSIGNEE"), clusive rights, title and in he APPLICATION (and all o inuing applications, in wh	limited liability company, on is entitled to, and is desirous terest, including the right of ther applications and patents tole or in part, in and for the PLICATION DERIVATIVES"));
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Application	No.	Filing Date	Office

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, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

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Yans	01/16/18
Inventor's Signature	Date
Jaewon Yang	
Printed Name in English	Printed Name in Native Language
	(if other than English)

inventor of s	subject matter ("	INVENTION") disclosed a	inventor or an original join ind/or claimed in a paten .S FOR IMPROVING SEARCH"
,4 L C t	ASSIGNEE'S legal in LC, One Microsoft LEGAL REPRESENT Don LOGIC CO. The following Office Co.	ASSIGNOR hereby authorepresentative, Microsoft Way, Redmond, Washing ATIVES), to insert here and given Application ffice blication No., filing date, as	Technology Licensing, ton 98052 (ASSIGNEE'S in parentheses (filed No
		nber 29, 2017 and was give following Office " <u>US Pater</u>	
behalf of itself of acquiring, of priority, in the derived theref	and its successors the entire and exc INVENTION and the from, such as cont	s and assigns ("ASSIGNEE"). clusive rights, title and in he APPLICATION (and all o inuing applications, in wh	limited liability company, or is entitled to, and is desirous terest, including the right of ther applications and patents tole or in part, in and for the PLICATION DERIVATIVES"));
to insert the		ling date, and Office into	EE'S LEGAL REPRESENTATIVES the following table for any
Application N	lo.	Filing Date	Office
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MS Docket No.: 902044-US-NP

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Mishe	01/17/2018	
Inventor's Signature	Date	
Abhishek Gupta		
Printed Name in English	Printed Name in Native Language	
	(if other than English)	

I Anish Ramdas Nair ("A' inventor of subject matter ('application entitled "GENERALIZ which:	'INVENTION") disclosed a	•	
ASSIGNEE'S legal LLC, One Microsof LEGAL REPRESENT on the following O	ASSIGNOR hereby authorepresentative, Microsoft Way, Redmond, Washing ATIVES), to insert here and given Application ffice and No., filing date, and plication by the polication of the pol	Technology Licensing, ton 98052 (ASSIGNEE'S in parentheses (filed Noby) this	
	nber 29, 2017 and was give following Office " <u>US Pate</u>		
Microsoft Technology Licensing, LLC, a Washington limited liability company, 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, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));			
ASSIGNOR hereby authori to insert the Application No., f APPLICATION DERIVATIVES after	iling date, and Office into	EE'S LEGAL REPRESENTATIVES the following table for any	
Application No.	Filing Date	Office	

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Lygh- 1/22/18

Inventor's Signature

Date

Anish Ramdas Nair

ANTSH NAIR

Printed Name in English

Printed Name in Native Language

MS Docket No.: 902044-US-NP

(if other than English)