504845731 03/30/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4892468

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PRATEEK JAIN	08/22/2017
RAMARATHNAM VENKATESAN	03/26/2018
KARTIK GUPTA	07/28/2017

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:	15620034

CORRESPONDENCE DATA

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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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ATTORNEY DOCKET NUMBER:	401820-US-NP(1777.067US1)	
NAME OF SUBMITTER:	TYLYN MOORE	
SIGNATURE:	/tylyn moore/	
DATE SIGNED:	03/30/2018	

Total Attachments: 7

source=1777067US1_Assignment#page1.tif source=1777067US1_Assignment#page2.tif source=1777067US1_Assignment#page3.tif source=1777067US1_Assignment#page4.tif source=1777067US1_Assignment#page5.tif

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PATENT REEL: 045395 FRAME: 0094

RECORDATION FORM COVER SHEET PATENTS ONLY

Atty Ref/Docket No.: 401820-US-NP (1777.067US1)

Patent and Trademark Office

To the Director of the U.S. Patent and Trademark Office: Plea	ase record the attached original documents or copy thereof.	
Name of conveying party(ies):	2. Name and address of receiving party(ies):	
Prateek Jain, Ramarathnam Venkatesan, Kartik Gupta	Name: Microsoft Technology Licensing, LLC	
Additional name(s) of conveying party(ies) attached?	Street Address: One Microsoft Way	
[]Yes [X]No	City: <u>Redmond</u> State: <u>WA</u> Zip: <u>98052</u> Country: <u>United States of America</u>	
3. Nature of conveyance:	Additional name(s) & address(es) attached? []Yes [X	.]No
[X] Assignment [] Merger [] Security Agreement [] Change of Name [] Other		
Execution Date: <u>August 22, 2017, March 26, 2018, July 28, 2017</u>		
4. Application number(s) or patent number(s):		
If this document is being filed together with a new application	n, the execution date of the application is:	
A. Patent Application No.(s)	B. Patent No.(s)	
Serial No. 15/620,034		
Additional numbers attached? []Yes [X]No		
5 Name and address of newtons and an account of the second and account of the second and account of the second and account of the second account of the se	6. Total number of applications and patents involved:	<u>1</u>
5. Name and address of party to whom correspondence concerning document should be mailed:	7. Total fee (37 CFR 3.41):\$ <u>0.00</u>	
Name: Troy D. Smith	[[Enclosed	
Address: Schwegman Lundberg & Woessner, P.A.	Authorized to be charged to deposit account 0743	19-
P.O. Box 2938 Minneapolis, Minnesota 554020938	8. Please charge any additional fees or credit any over payments to our Deposit Account No.: 19-0743	er
DO NOT USE	THIS SPACE	
9. Statement and signature. To the best of my knowledge and belief, the foregoing inform of the original document.	nation is true and correct and any attached copy is a true co	ру
Troy D. Smith/Reg. No. 62,349	2018-03-30	
Name of Person Signing	Signature Date	
Tota	al number of pages including cover sheet: 7	
Mail documents to be recorded with required cover sheet information Commissioner of Patents and Trademarks	rmation to:	

Commissioner of Patents and Trademarks Mail Stop Assignment Recordation Services P.O. Box 1450 Alexandria, VA 22313-1450

> PATENT REEL: 045395 FRAME: 0095

of subject m	atter ("INVENTION")	_	r or an original joint inventor n a patent application entitled
	will be filed. ASSIGNEE'S legal in the following Office of the following	ASSIGNOR hereby authorepresentative, Microsoft way, Redmond, Washingt ATIVES), to insert here and given Application office	Technology Licensing, con 98052 (ASSIGNEE'S in parentheses (filed No by) this
		2, 2017 and was given Ap e following Office " <u>US Pater</u>	
behalf of itse of acquiring priority, in the derived ther	elf and its successors, the entire and exc ne INVENTION and t efrom, such as cont	s and assigns ("ASSIGNEE"), clusive rights, title and in he APPLICATION (and all o tinuing 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"));
to insert the	•	iling date, and Office into	EE'S LEGAL REPRESENTATIVES the following table for any
Application	No.	Filing Date	Office

MS Docket No.: 401820-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).

Inversor's Signature	Date
Prateek Jain	
Printed Name in English	Printed Name in Native Language
	(if other than English)

I Ramarathnam Venkates	an ("ASSIGNOR") am the or	iginal inventor or an original	
joint inventor of subject matte	·	3	
application entitled "HOMOMOR		·	
<u></u>		,	
\square will be filed.	ASSIGNOR hereby autho	rizes, and requests,	
ASSIGNEE'S legal i	representative, Microsoft ⁻	Technology Licensing,	
_	t Way, Redmond, Washingt	· · · · · · · · · · · · · · · · · · ·	
	ATIVES), to insert here		
	and given Application	•	
the following O		•	
.	olication No., filing date, an		
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oxtimes was filed on <u>June 1</u>	<u>2, 2017</u> and was given Ap	plication No	
<u>15/620,034</u> by the	e following Office " <u>US Pater</u>	nt Office ";	
Microsoft Technology Lic	ensing, LLC, a Washington	limited liability company, on	
behalf of itself and its successors	s and assigns ("ASSIGNEE"),	is entitled to, and is desirous	
of acquiring, the entire and ex-	<u> </u>		
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 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;			
, , , , , , , , , , , , , , , , , , ,	(iii) (iii)		
Application No.	Filing Date	Office	
Approaction	1 mily Date		

MS Docket No.: 401820-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).

Pamarattvam lenkatean Inventor's Signature

Date

Ramarathnam Venkatesan

Printed Name in English

Printed Name in Native Language

MS Docket No.: 401820-US-NP

(if other than English)

That the dupta (Abstractor) and the original inventor of all original joint inventor
of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled
"HOMOMORPHIC FACTORIZATION ENCRYPITION", which:
HOMOWORTHE LACTORIZATION ENCERTITION, WHICH.
will be filed. ASSIGNOR hereby authorizes, and requests,
ASSIGNEE'S legal representative, Microsoft Technology Licensing,
그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그
LLC, One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S
LEGAL REPRESENTATIVES), to insert here in parentheses (filed
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onand given Application Noby
the following Office
APPLICATION's Application No., filing date, and Office, when known;
was filed on June 12, 2017 and was given Application No
15/620,034 by the following Office "US Patent Office";
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 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	Office

MS Docket No.: 401820-US-NP

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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).

s. Alber		
700		JULY 28 2017
Inventor's Signature	**	Date
Kartik Gupta		कार्ति गुना
Printed Name in English	# : : : : : : : : : : : : : : : : : : :	Printed Name in Native Language (if other than English)