PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5661756

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DANIEL SAIROM KRISHNAN HEWLETT	07/11/2019
DAN LIU	07/08/2019
QI GUO	07/09/2019
WENXIANG CHEN	07/03/2019
XIAOYI ZHANG	07/08/2019
LESTER GILBERT COTTLE III	07/30/2019
XUEBIN YAN	07/11/2019
YU GONG	07/08/2019
HAITONG TIAN	07/08/2019
SIYAO SUN	07/10/2019
PEI-LUN LIAO	07/08/2019

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:	16449149

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: | 3080.K94US1

PATENT REEL: 050017 FRAME: 0640

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NAME OF SUBMITTER:	ROBIN L. MONSEES
SIGNATURE:	/ ROBIN L. MONSEES /
DATE SIGNED:	08/09/2019
Total Attachments: 23	
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> PATENT REEL: 050017 FRAME: 0641

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			lisclosed and/or claimed in a
		NO-STAGE TRAINING WI	TH NON-RANDOMIZED AND
RANDOMIZE	D DATA", which:		
	will be filed.	ASSIGNOR hereby autho	orizes, and requests,
	ASSIGNEE'S legal r	representative, Microsoft	Technology Licensing,
	LLC, One Microsoft	t Way, Redmond, Washingt	ton 98052 (ASSIGNEE'S
	LEGAL REPRESENT	ATIVES), to insert here	in parentheses (filed
		and given Application	•
		ffice	
		olication No., filing date, ar	
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\square	was filed on lune 2	21, 2019 and was given Ap	ratioation No
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	10/495,145 by the	following Office " <u>US Pate</u>	<u>nt Office</u> ,
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			I limited liability company, on
			, is entitled to, and is desirous
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•			other applications and patents
			nole or in part, in and for the
United State:	s, its territories, and	all foreign countries ("API	PLICATION DERIVATIVES"));
ASSIG	NOR hereby authori	zes, and requests, ASSIGN	IEE'S LEGAL REPRESENTATIVES
to insert the	Application No., f	iling date, and Office into	o the following table for any
APPLICATION	N DERIVATIVES after	they are known;	
Application	No.	Filing Date	Office

Sant Hull	7/11/2019
Inventor's Signature	Date
Daniel Sairom Krishnan Hewlett	
Printed Name in English	Printed Name in Native Language
	(if other than English)

subject matter ("INVENTION")	disclosed and/or clai	entor or an original joint inventor of imed in a patent application entitled AND RANDOMIZED DATA", which:
ASSIGNEE'S lega LLC, One Micros LEGAL REPRESEI on the following	l representative, Micoft Way, Redmond, WNTATIVES), to insert	authorizes, and requests, crosoft Technology Licensing, dashington 98052 (ASSIGNEE'S there in parentheses (filed lication No
	e <u>21, 2019</u> and was g the following Office " <u>L</u>	
behalf of itself and its successor of acquiring, the entire and of priority, in the INVENTION and derived therefrom, such as co	ors and assigns ("ASSI exclusive rights, title d the APPLICATION (a ontinuing applications	nington limited liability company, on IGNEE"), is entitled to, and is desirous and interest, including the right of nd all other applications and patents, in whole or in part, in and for the es ("APPLICATION DERIVATIVES"));
•	, filing date, and Off	ASSIGNEE'S LEGAL REPRESENTATIVES ice into the following table for any
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"));

Dan Liu	07/08/2019
Inventor's Signature	Date ' ' '
Dan Liu	21A
Printed Name in English	Printed Name in Native Language
	(if other than English)

	plication No., fi	lling date, and Office into	IEE'S LEGAL REPRESENTATIVES o the following table for any
		•	PLICATION DERIVATIVES"));
priority, in the II	NVENTION and th	ne APPLICATION (and all o	iterest, including the right of other applications and patents nole or in part, in and for the
behalf of itself a	nd its successors	and assigns ("ASSIGNEE")	limited liability company, on , is entitled to, and is desirous
		1, 2019 and was given Ap following Office " <u>US Pate</u>	
АР	PLICATION's App	olication No., filing date, a	nd Office, when known;
		ficeand given Application	
LL(LE(C, One Microsoft GAL REPRESENT.	Way, Redmond, Washing ATIVES), to insert here and given Application	ton 98052 (ASSIGNEE'S in parentheses (filed
		ASSIGNOR hereby authorepresentative, Microsoft	

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"));

C2) C	07/09/2019
Inventor's Signature	Date
Qi Guo	tra e
Printed Name in English	Printed Name in Native Language
	(if other than English)

	<u> </u>		inventor or an original joint
	•		and/or claimed in a patent
application		TAGE TRAINING WITH	I NON-RANDOMIZED AND
RANDOMIZE	<u>D DATA</u> ", which:		
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	will be filed.	ASSIGNOR hereby auth	orizes, and requests,
	ASSIGNEE'S legal r	epresentative, Microsoft	Technology Licensing,
	LLC, One Microsoft	: Way, Redmond, Washing	jton 98052 (ASSIGNEE'S
	LEGAL REPRESENT	ATIVES), to insert here	in parentheses (filed
	on	and given Application	
	the following Of	ffice) this
	APPLICATION's App	olication No., filing date, a	and Office, when known;
\boxtimes	was filed on June 2	1, 2019 and was given A	pplication No
		following Office " <u>US Pate</u>	- "
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Micro:	soft Technology Lice	ensing, LLC, a Washingto	n limited liability company, on
behalf of itse	If and its successors	and assigns ("ASSIGNEE"), is entitled to, and is desirous
			nterest, including the right of
			other applications and patents
•			hole or in part, in and for the
		-	PPLICATION DERIVATIVES"));
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ASSIG	NOR hereby authori	zes. and requests. ASSIGI	NEE'S LEGAL REPRESENTATIVES
	•	• •	to the following table for any
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Application	No.	Filing Date	Office
1			

a (7/3/2019
Inventor's Signature	Date
Wenxiang Chen	た、文 ネギ
Printed Name in English	Printed Name in Native Language
	(if other than English)

l Xiaoyi Zhang ("ASSIGNOR") am the original inventor or an original	joint inventor
of subject matter ("INVENTION") disclosed and/or claimed in a patent appli	cation entitled
"TWO-STAGE TRAINING WITH NON-RANDOMIZED AND RANDOMIZED DAT	<u>'A</u> ", which:
will be filed. ASSIGNOR hereby authorizes, and re	quests,
ASSIGNEE'S legal representative, Microsoft Technology Lic	ensing,
LLC, One Microsoft Way, Redmond, Washington 98052 (ASS	IGNEE'S
LEGAL REPRESENTATIVES), to insert here in parenthese	s (filed
on and given Application No	by
the following Office	_) this
APPLICATION's Application No., filing date, and Office, when	known;
oxtimes was filed on June 21, 2019 and was given Application No	
16/499,149 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, a	
of acquiring, the entire and exclusive rights, title and interest, includin	-
priority, in the INVENTION and the APPLICATION (and all other application	•
derived therefrom, such as continuing applications, in whole or in part,	
United States, its territories, and all foreign countries ("APPLICATION DERI	VATIVES"));
ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S LEGAL REP	
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	

X LL	07/08/2019
Inventor's Signature	Date
Xiaoyi Zhang	张秦翼
Printed Name in English	Printed Name in Native Language
	(if other than English)

PATENT ASSIGNMENT	М	S Docket No.: 902515-US-NP
inventor of subject matter	-	·
ASSIGNEE'S legal LLC, One Microso LEGAL REPRESEN on the following	ASSIGNOR hereby authorepresentative, Microsoft of Way, Redmond, Washington (TATIVES), to insert here and given Application Office pplication No., filing date, ar	Technology Licensing, on 98052 (ASSIGNEE'S in parentheses (filed No
	21, 2019 and was given Ap he following Office " <u>US Pater</u>	
Microsoft Technology Libehalf of itself and its successor of acquiring, the entire and e priority, in the INVENTION and derived therefrom, such as co United States, its territories, ar	ors and assigns ("ASSIGNEE"), exclusive rights, title and in the APPLICATION (and all o ntinuing applications, in wh	terest, including the right of ther applications and patents ole or in part, in and for the
ASSIGNOR hereby autho to insert the Application No., APPLICATION DERIVATIVES afte	filing date, and Office into	EE'S LEGAL REPRESENTATIVES the following table for any
Application No.	Filing Date	Office

3-956 B 24-4-176-17	2019-07-30
Inventor's Signature	Date
Lester Gilbert Cottle III	
Printed Name in English	Printed Name in Native Language
	(if other than English)

5 37 I	in New Wiccienton		
		_	or an original joint inventor of
•			a patent application entitled
"TWO-STAGE	E TRAINING WITH NO	N-RANDOMIZED AND RAI	NDOMIZED DATA", 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	Technology Licensing, on 98052 (ASSIGNEE'S in parentheses (filed Noby) this
	APPLICATION'S APP	olication No., filing date, ar	nd Office, when known;
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to insert the	•	lling date, and Office into	EE'S LEGAL REPRESENTATIVES the following table for any
Application	No.	Filing Date	Office

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).

subject matt	er ("INVENTION") di	<u>-</u>	r an original joint inventor of a patent application entitled NDOMIZED DATA", 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 office	Technology Licensing, ton 98052 (ASSIGNEE'S in parentheses (filed No
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	N DERIVATIVES after	•	the following table for any
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"));

Yu Grong	July 2, 2019
Inventor's Signature	Date /
Yu Gong Printed Name in English	Printed Name in Native Language
(qF	(if other than English)

	_		r or an original joint inventor
•		disclosed and/or claimed in DN-RANDOMIZED AND RAI	n a patent application entitled NDOMIZED DATA", 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 fice and onlication of the polication of the policat	Technology Licensing, on 98052 (ASSIGNEE'S in parentheses (filed Noby) this
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Application	No.	Filing Date	Office

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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).

Invent	or's	Signature	

Haitong Tian

Printed Name in English

Date

田海道

Printed Name in Native Language (if other than English)

I Siyac	Sun ("ASSIGNOR") :	am the original inventor o	r an original joint inventor of
subject matt	er ("INVENTION") di	sclosed and/or claimed in	a patent application entitled
•		N-RANDOMIZED AND RAI	• •
	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 office	Technology Licensing, on 98052 (ASSIGNEE'S in parentheses (filed Noby) this
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Inventor's Signature

Siyao Sun

Printed Name in English

///0/20/9

Date

Printed Name in Native Language

(if other than English)

of subject ma	atter ("INVENTION")	· ·	or or an original joint inventor n a patent application entitled NDOMIZED DATA", 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 office and filing date, and given Application of the polication of the	Technology Licensing, ton 98052 (ASSIGNEE'S in parentheses (filed Noby) this
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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"));

PEJ- LUN LJAO	07/08/ x 0 / 9
Inventor's Signature	Date
Pei-Lun Liao	
Printed Name in English	Printed Name in Native Language
	(if other than English)