### 506326591 10/28/2020

### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 EPAS ID: PAT6373341 Stylesheet Version v1.2

SUBMISSION TYPE:NEW ASSIGNMENTNATURE OF CONVEYANCE:ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
FAN ZHANG	10/23/2020
AMAN BHATIA	10/26/2020
XUANXUAN LU	10/27/2020
MEYSAM ASADI	10/23/2020
HAOBO WANG	10/23/2020

### **RECEIVING PARTY DATA**

Name:	SK HYNIX MEMORY SOLUTIONS AMERICA INC.
Street Address:	3103 NORTH FIRST STREET
City:	SAN JOSE
State/Country:	CALIFORNIA
Postal Code:	95134

### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	17082838

### **CORRESPONDENCE DATA**

**Fax Number:** (571)327-5452

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.

**Phone:** 5713275450

Email: ipntlaw@ipntlaw.com

Correspondent Name: IP & T GROUP LLP

Address Line 1: 8230 LEESBURG PIKE

Address Line 2: SUITE 650

Address Line 4: VIENNA, VIRGINIA 22182

ATTORNEY DOCKET NUMBER:	P20HS0003
NAME OF SUBMITTER:	JEONGSOOK YI
SIGNATURE:	/Jeongsook YI/
DATE SIGNED:	10/28/2020
	This document serves as an Oath/Declaration (37 CFR 1.63).

PATENT 506326591 REEL: 054199 FRAME: 0549

# Total Attachments: 5 source=P20HS0003-Allsigned#page1.tif source=P20HS0003-Allsigned#page2.tif source=P20HS0003-Allsigned#page3.tif source=P20HS0003-Allsigned#page4.tif

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Attendey Cocket (%), PREESTON

### ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS	Fan ZHANG	***************************************	, hereinwiter referred to
collectively as the as	signor and inventor, has invente	d a certain improvement relating t	ko
READ THRESHO	OLD OFTINGZATION SYSTE	EMS AND METHODS USING	MODEL-LESS REGRESSION .
[ ] said application   (if applicable); [ ] the specification   Serial No	ss Application Serial ) of which was filed under the Est the United (	itanes Patum and Trademark Offic in. am Cooperation Trasty on Status of America being designate	and was amended or
bereinafter referred to application, including	o as the acceptee or applicant, is g any and all divisions and conti		ight, title and inserest in and to said id invention and any and all patents
consideration paid be assigned, with each the innerest in and to said any and all patents to assigned, and hald as all divisions and co including any and all anywise grising from including any and a assigned's successors	n asid serignee to said saatsno nofers to said saatspree, and said application, including any and thick may be granted therefor, signee's increasion and assigns, normations thereof, and the as I renewalk, relievee and prolong or appertaining thereof, for an if renewalk, relieves and ground	or, the receipt of which is bared a sample assign all divisions and continuations of inching any and all renewals, a to have, hold, eventue and edge of have made any and all presented and edge of haventon and any and all populous thereof, with all the right and during the term or terms of a negations thereof, to the use a negations thereof, to the use a negations thereof, and the term of the use and all the first the said of the use and all the made of a negations thereof.	(\$1,00), and other good and valuable y acknowledged, and analyze benefit, and an ignor benefit, as the full and exclusive right, title and served, and in and to said invention and elsause and profongations thereof, said the said application, including any and attents which may be granted therefor, powers, printleges and advantages in any and all such patents when granted ad benefit of said assigner, and and sevigner, and and sevigner might or could have held and
	acts relating to the obtaining or		ignee, or said assignment souccessors of actoding any and all renewals, reisones
	on any and all finisions and co		i Trademarks to issue Letters Patent or nee, and said sesignee's successors said
		lare that the above identified app original joint inventor of a claim	plication was made or amhorized to be sed invention in the application.
	moniselge that any nillful false est of not more than five (3) yes		sa is punishable under IS U.S.C. 1961
ASSEGNOR (INVE)	70%		
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		Page 1 of 9	

Attorney Docket No.: P20HS0003

		TES LETTERS PATENT
WHEREAS	Aman BHATIA	, hereinafter referred to
	ignor and inventor, has invented a cer	
READ THRESHO	LD OPTIMIZATION SYSTEMS A	ND METHODS USING MODEL-LESS REGRESSION ,
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(if applicable); [ ] the specification of Serial No.	f which was filed under the Patent Co the United States o	operation Treaty on
hereinafter referred to	as the assignee or applicant, is desiro any and all divisions and continuation	merica Inc. of 3103 North First Street, San Jose, CA 95134.  Mus of acquiring the entire right, title and interest in and to said  mus thereof, and in and to said invention and any and all patents  ruls, reissues and prolongations thereof;
consideration paid by assigns, sells and tran interest in and to said any and all patents w assignee, and said ass all divisions and con including any and all anywise arising from including any and all assignee's successors	said assignee to said assignor, the asfers to said assignee, and said assignee, and said assign application, including any and all divided hich may be granted therefor, including assigns, to have tinuations thereof, and the said inverse wals, reissues and prolongations or appertaining thereto, for and during the said inverse wals, reissues and prolongations.	isideration of One Dollar (\$1.00), and other good and valuable receipt of which is hereby acknowledged, said assignor hereby nee's successors and assigns, the full and exclusive right, title and visions and continuations thereof, and in and to said invention and ing any and all renewals, reissues and prolongations thereof; said e, hold, exercise and enjoy the said application, including any and ention and any and all patents which may be granted therefor, thereof, with all the rights, powers, privileges and advantages in ing the term or terms of any and all such patents when granted, ons thereof, for the use and benefit of said assignee, and said cial a manner as the said assignor might or could have held and
AND said as assigns, any and all a and prolongations the	cts relating to the obtaining or to the	on the request of said assignee, or said assignee's successors or asserting of said patents, including any and all renewals, reissues
AND said as said application, and assigns, in accordance	on any and all divisions and continua	mmissioner of Patents and Trademarks to issue Letters Patent on tions thereof, to said assignee, and said assignee's successors and
As an above made by me, and that	named inventor, I hereby declare the I am the original inventor or an original inventor or	at the above-identified application was made or authorized to be nal joint inventor of a claimed invention in the application.
I hereby ack by fine or imprisonme	nowledge that any willful false stater ent of not more than five (5) years, or	nent made in this declaration is punishable under 18 U.S.C. 1001 both.
ASSIGNOR (INVEN	(TOR):	
	dan. Bluk.	Date: 10/26/2020
Signature:		
سبرکٹ کے ایس	Aman BHAT	
Printed or Typed Nar	(1)	ma 7 mf &

Attorney Docket No.: P20HS0003

## ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS	Xuanxuan LU	hereinafter referred to
collectively as the assi	ignor and inventor, has inven	ied a certain improvement relating to
READ THRESHO	LD OPTIMIZATION SYS	TEMS AND METHODS USING MODEL-LESS REGRESSION
[X] said application by [X] said application by (if applicable).	eing attached hereto; aving been filed in the United as Application Serie	I States Patent and Trademark Office on If No, and was amended on atent Cooperation Treaty on  I States of America being designated
		ttions America Inc. of 3103 North First Street, San Jose, CA 95134
hereinafter referred to application, including	as the assignee or applicant, any and all divisions and cor	is desirous of acquiring the entire right, title and interest in and to said trinuations thereof, and in and to said invention and any and all patents all renewals, reissues and prolongations thereof;
consideration paid by assigns, sells and tran- interest in and to said any and all patents wh assignee, and said assi- all divisions and con- including any and all anywise arising from including any and all assignee's successors	said assignee to said assignees for said assignee, and sa application, including any ar hich may be granted therefor gnee's successors and assign tinuations thereof, and the renewals, reissues and prolo or appertaining thereto, for 1 renewals, reissues and pro-	d in consideration of One Dollar (\$1.00), and other good and valuable nor, the receipt of which is hereby acknowledged, said assigner hereby id assignee's successors and assigns, the full and exclusive right, title and id all divisions and continuations thereof, and in and to said invention and including any and all renewals, reissues and prolongations thereof, said in to have, hold, exercise and enjoy the said application, including any and said invention and any and all patents which may be granted therefor, ingations thereof, with all the rights, powers, privileges and advantages in and during the term or terms of any and all such patents when granted, alongations thereof, for the use and benefit of said assignee, and said if beneficial a manner as the said assignor might or could have held and made.
	cts relating to the obtaining o	form, upon the request of said assignee, or said assignee's successors or or to the asserting of said patents, including any and all renewals, reissues
	m any and all divisions and	is the Commissioner of Patents and Trademarks to issue Letters Patent on continuations thereof, to said assignee, and said assignee's successors and
		exlare that the above-identified application was made or authorized to be an original joint inventor of a claimed invention in the application.
	nowledge that any willful fal int of not more than five (5) y	se statement made in this declaration is punishable under 18 U.S.C. 1001 rears, or both.
ASSIGNOR (INVEN	TOR):	
Signature:	<u> </u>	Date: 10/27/2020
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## ASSECTMENT OF AND DECLARATED FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS	Mercan ASADY	hereinaller releared to
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Land application !	oeing attached lieseto; iaving been filed to the United State as Application Serial No.	s Patent and Taudenaut Office on, and was amended on
(1) the specification :	of which was filed under the Patent (	Sorgenstion Treasy on of America being slanginated.
kersmafter referred to saad application, incl	) as the assignme or applicant, is det uding any and all dromens and com	menca loc of 1103 North Fast Street. San Jose, CA 95134 innus of acquising the entire right, title and interest in and to invarient thereof, and in and to said invention and any and and all renewals, sensines and prolongations thereof.
consideration paid thereby assigns, sell each same right, take and in said in	y and assigned to and notigned, and transfer to and assigned, and instanced are and assigned, and instant application remains and any and all patents with a said assigned, as the said assigned as the said assigned as and all patents which may be grant, with all the nights, powers, pound all patents of any and all gatents thereof, for the user and he and become thereof, for the user and he	suferation of One Dellar (\$1.00), and other good and valuable the receipt of which is hereby acknowledged, and assigness and assigness successors and assigness the full and on, including any and all documents and continuous thereof, ack may be granted therefor, including any and all renewals, it said assignests nuccessors and assigns, to have, held, and all discussors and continuations thereof, and the said med therefor, including any and all renewals, remained and appearance and represent an anyware assent from or appearance, such patents when granted including any and all renewals, remained and assignes, and accordance and renewals and great and assigness and accordance and said assigness and accordance and said assigness and assigness as as a second assigness and assigness as as a second assigness and assigness as a second as a sec
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		that the above identified application was made or authorized or an original joint averagor of a classical averaging in the
	nowhige that any valid false statement of not more than five (5) ye	ement made in this declaration is punishable under 18 USC. ars, or both
ASSIGNOR GIVEN	708):	
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Attorney Docket No.: P20HS0003

## ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS	Haobo WANG	, hereinafter referred to
	ignor and inventor, has invented a ce	
READ THRESHO	LD OPTIMIZATION SYSTEMS	AND METHODS USING MODEL-LESS REGRESSION ,
[X] said application b [ ] said application h	eing attached hereto; aving been filed in the United States , as Application Serial No.	Patent and Trademark Office on, and was amended on
I the specification of	f which was filed under the Patent C, the United States	ooperation reaty on,
hereinafter referred to application, including	as the assignee or applicant, is desir any and all divisions and continuati	ous of acquiring the entire right, title and interest in and to said ons thereof, and in and to said invention and any and all patents wals, reissues and prolongations thereof;
consideration paid by assigns, sells and tran- interest in and to said any and all patents w assignee, and said ass all divisions and cor- including any and all anywise arising from including any and all assignee's successors	said assignee to said assignor, the sfers to said assignee, and said assig- application, including any and all d hich may be granted therefor, inclu- ignee's successors and assigns, to ha tinuations thereof, and the said in- renewals, reissues and prolongation or appertaining thereto, for and du I renewals, reissues and prolongat	ensideration of One Dollar (\$1.00), and other good and valuable receipt of which is hereby acknowledged, said assignor hereby gnee's successors and assigns, the full and exclusive right, title and existence and continuations thereof, and in and to said invention and ling any and all renewals, reissues and prolongations thereof, said we, hold, exercise and enjoy the said application, including any and vention and any and all patents which may be granted therefor, s thereof, with all the rights, powers, privileges and advantages in ring the term or terms of any and all such patents when granted, ions thereof, for the use and benefit of said assignee, and said icial a manner as the said assignor might or could have held and
AND said a assigns, any and all a and prolongations the	cts relating to the obtaining or to the	pon the request of said assignee, or said assignee's successors of asserting of said patents, including any and all renewals, reissues
AND said as said application, and assigns, in accordance	on any and all divisions and continu	Commissioner of Patents and Trademarks to issue Letters Patent or lations thereof, to said assignee, and said assignee's successors and
As an above made by me, and that	-named inventor, I hereby declare t I am the original inventor or an orig	hat the above-identified application was made or authorized to be inal joint inventor of a claimed invention in the application.
I hereby ack by fine or imprisonm	nowledge that any willful false state ent of not more than five (5) years, o	ement made in this declaration is punishable under 18 U.S.C. 1001 r both.
ASSIGNOR (INVEN		
Signature:	Lado Was	Date: 10/23/2020
Printed or Typed Nar	ne: <u>Haobo WA</u>	<u>NG</u>

Page 5 of 5

PATENT REEL: 054199 FRAME: 0555

**RECORDED: 10/28/2020**