504264794 03/09/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4311474

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JASON KAO	03/09/2017
ERKANG ZHENG	03/08/2017

RECEIVING PARTY DATA

Name:	FMR LLC
Street Address:	245 SUMMER STREET
City:	BOSTON
State/Country:	MASSACHUSETTS
Postal Code:	02210

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	15441647	

CORRESPONDENCE DATA

Fax Number: (617)526-9899

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: 617-526-9600

Email: dgilbride@proskauer.com Correspondent Name: PROSKAUER ROSE LLP Address Line 1: ONE INTERNATIONAL PLACE

Address Line 4: BOSTON, MASSACHUSETTS 02110

ATTORNEY DOCKET NUMBER:	FID-178
NAME OF SUBMITTER:	XIN HU RASMUSSEN
SIGNATURE:	/Xin Hu Rasmussen/
DATE SIGNED:	03/09/2017
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4

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PATENT REEL: 041528 FRAME: 0905

Attorney Docket No.: FID-178

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S):

Kao et al.

CONFIRMATION NO.: 8296

APPLICATION NO.: 15/441.647

FILING DATE:

February 24, 2017

TITLE:

Systems and Methods for User Authentication Using Pattern-Based Risk

Assessment and Adjustment

DECLARATION PURSUANT TO 37 C.F.R. § 1.63 AND ASSIGNMENT

₹. DECLARATION

As the below named inventor, I hereby make the following declarations with respect to the aboveidentified patent application:

The above-identified application was made or authorized to be made by me;

I believe that I am the original inventor or an original joint inventor of a claimed invention in the aboveidentified application;

I hereby state that I have reviewed and understand the contents of the above-identified application. including the claims;

I acknowledge the duty to disclose to the Patent Office all information known by me to be material to patentability as defined in 37 C.F.R. § 1.56, including for continuation-in-part applications, material information known by me which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application; and

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

II. ASSIGNMENT

WHEREAS, I, Jason Kao, have invented, solely or jointly, one or more inventions described in the above-identified patent application for letters patent; and

WHEREAS, FMR LLC (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware, and having a usual place of business at 245 Summer Street, Boston, MA 02210, desires to acquire an interest therein, in accordance with agreements duly entered into with me.

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, my entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the invention(s) described in said application, together with my entire right, title and interest in and to said application and such letters patent as may issue thereon or claim priority under United States law or international convention, including but not limited to non-provisionals, continuations, divisionals, reissues, reexaminations, extensions, and substitutions of said application or such letters patent, and any right, title and interest I may have in provisional applications to which said application claims priority: said invention(s), applications and letters patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said letters patent may be granted as fully and entirely as the same would have been held by me

> PATENT **REEL: 041528 FRAME: 0906**

had this assignment and sale not been made. I hereby convey all of my rights arising under or pursuant to any and all United States laws and international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for letters patent, including but not limited to any cause(s) of action and damages accruing prior to this assignment. I hereby acknowledge that this assignment, being of my entire right, title and interest in and to said invention(s), carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all letters patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all letters patent to ASSIGNEE in its own name as assignee of my entire right, title and interest therein.

I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention(s) to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including the execution of non-provisional, substitution, continuation, divisional, reissue, reexamination, or corresponding foreign or international patent applications.

I hereby further agree to provide statements or testimony in any interference or other proceeding in which said invention(s) or any application or patent directed thereto may be involved.

I hereby authorize and request the Director of the United States Patent and Trademark Office to issue such letters patent as shall be granted upon said application, or applications based thereon, to said ASSIGNEE, its successors, assigns, or legal representatives.

CHANGE FOR TREASURY AND CONTRA

iii Simaina biota	
IN TESTIMONY WHEREOF, I have hereunto set my hand-and affixed my s forth below.	eal on the date set
NOTARIZATION Inventor: //www.mson/Kao	
State/Commonwealth of //) County of Dechara) ss	
On this The day of Notar Public See Aude My Commission Expires:	cation, which were preceding or
WITNESS Witness Signature:	
Witness Name:	
Witness Date:	

Attorney Docket No.: FID-178

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S):

Kao et al.

CONFIRMATION NO.: 8296

APPLICATION NO.: 15/441,647

FILING DATE:

February 24, 2017

TITLE:

Systems and Methods for User Authentication Using Pattern-Based Risk

Assessment and Adjustment

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₹. DECLARATION

As the below named inventor, I hereby make the following declarations with respect to the aboveidentified patent application:

The above-identified application was made or authorized to be made by me;

I believe that I am the original inventor or an original joint inventor of a claimed invention in the aboveidentified application;

I hereby state that I have reviewed and understand the contents of the above-identified application, including the claims:

I acknowledge the duty to disclose to the Patent Office all information known by me to be material to patentability as defined in 37 C.F.R. § 1.56, including for continuation-in-part applications, material information known by me which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application; and

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

II. ASSIGNMENT

WHEREAS, I, Erkang Zheng, have invented, solely or jointly, one or more inventions described in the above-identified patent application for letters patent; and

WHEREAS, FMR LLC (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware, and having a usual place of business at 245 Summer Street, Boston, MA 02210, desires to acquire an interest therein, in accordance with agreements duly entered into with

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, my entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the invention(s) described in said application, together with my entire right, title and interest in and to said application and such letters patent as may issue thereon or claim priority under United States law or international convention, including but not limited to non-provisionals, continuations, divisionals, reissues, reexaminations, extensions, and substitutions of said application or such letters patent, and any right, title and interest I may have in provisional applications to which said application claims priority; said invention(s), applications and letters patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said letters patent may be granted as fully and entirely as the same would have been held by me

> PATENT **REEL: 041528 FRAME: 0908**

had this assignment and sale not been made. I hereby convey all of my rights arising under or pursuant to any and all United States laws and international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for letters patent, including but not limited to any cause(s) of action and damages accruing prior to this assignment. I hereby acknowledge that this assignment, being of my entire right, title and interest in and to said invention(s), carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all letters patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all letters patent to ASSIGNEE in its own name as assignee of my entire right, title and interest therein.

I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention(s) to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including the execution of non-provisional. substitution, continuation, divisional, reissue, reexamination, or corresponding foreign or international patent applications.

I hereby further agree to provide statements or testimony in any interference or other proceeding in which said invention(s) or any application or patent directed thereto may be involved.

I hereby authorize and request the Director of the United States Patent and Trademark Office to issue such letters patent as shall be granted upon said application, or applications based thereon, to said ASSIGNEE, its successors, assigns, or legal representatives.

111. SIGNATURE BLOCK

IN TESTIMONY WHEREOF, I have her forth below.	eunto set my hand-a	nd affixed my seal on the date set
	Inventor:	Érkang Zheng
NOTARIZATION		Linang Zueng
State/Commonwealth of NO) County of Darham) ss		
On this day of Masch 2 personally appeared Jason Kao, proved to me throung the standard of the pattached document in my presence.	ugh satisfactory evid erson whose name is Notary Public	Sisan Weddord
WITNESS (Wy Commiss	ion Expires: <u>んかく 1,2のつ</u>
Witness Signature 4 AUBLIC O		
Witness Name: The COUNT meters		
Witness Date:	· · · · · · · · · · · · · · · · · · ·	

PATENT REEL: 041528 FRAME: 0909

RECORDED: 03/09/2017