PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
XU BENJAMIN FANG	01/25/2017
LEWIS WONG	01/25/2017

RECEIVING PARTY DATA

Name:	CAPITAL ONE SERVICES, LLC
Street Address:	1680 CAPITAL ONE DRIVE
City:	MCLEAN
State/Country:	VIRGINIA
Postal Code:	22102

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15997745

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER: COF0014CON		
NAME OF SUBMITTER:	BRENNAN M. CARMODY	
SIGNATURE:	/Brennan M. Carmody, Reg. No. 72,665/	
DATE SIGNED:	06/05/2018	

Total Attachments: 4

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PATENT 504944267 REEL: 045985 FRAME: 0564

ASSIGNMENT

WHEREAS, We, Xu Benjamin FANG and Lewis WONG (collectively, "Assignor"), have invented certain improvements in SYSTEMS AND METHODS FOR CUSTOMER SENTIMENT PREDICTION AND DEPICTION, for which U.S. Provisional Patent Application No. 62/437,714 was filed on December 22, 2016, and for which future applications may be filed, (collectively referred to as the "Application"), and whereas

> CAPITAL ONE SERVICES, LLC 1680 Capital One Drive McLean, VA 22012 United States of America

("Assignee") desires to purchase all the rights in same;

NOW THEREFORE, in consideration of the sum of One Dollar (\$1.00) and other good and valuable considerations paid by the said Assignee, the receipt and sufficiency of which are hereby acknowledged, Assignor has and by these presents does hereby sell, assign, transfer and convey unto said Assignee all of Assignor's rights, title, and interest in and to said Application, including in and to any conventional, division, continuation, continuation-in-part, substitution, reissue, renewal, reexam, continued prosecution application ("CPA"), or request for continued examination ("RCE") thereof, and in and to all inventions and improvements thereon (herein collectively referred to as "Related US Applications"), preparatory to obtaining Letters Patent of the United States thereof; and Assignor hereby requests the Commissioner of Patents and Trademarks to issue any and all Letters Patent of the United States resulting from said Application and Related US Applications, to Assignee, for its interest and for the sole use and benefit of Assignee and its assigns and legal representatives.

For the same consideration, Assignor, by these presents does sell, assign, and transfer to Assignee all of Assignor's rights, title and interest in and to any foreign and international applications related to and/or seeking benefit of said Application and Related US Applications, and in and to all inventions and improvements thereon (herein collectively referred to as "Related Foreign Applications"), in and to any Letters Patent and similar protective rights granted on said Related Foreign Applications, and in and to the right to claim any applicable priority rights arising from or required for said Related Foreign Applications under the terms of any applicable conventions, treaties, statutes, or regulations, said Related Foreign Applications to be filed and issued in the name of Assignee or its designee, insofar as permitted by applicable law.

For the same consideration, Assignor agrees, without charge to Assignee, but at Assignee's expense, to sign all lawful papers, execute said Application, Related US Applications and Related Foreign Applications, make all assignments and rightful oaths, assist in prosecution of said Application. Related US Applications and Related Foreign Applications, assist in prosecution of legal proceedings, and generally do everything reasonably possible to aid Assignee its successors, assigns, and nominees, to obtain and enforce proper protection for all said inventions and improvements in all countries throughout the world.

TROUTMAN

PATENT

REEL: 045985 FRAME: 0565

AND, for the same consideration, Assignor also hereby sells, assigns and transfers unto Assignee all of Assignor's rights and claims to sue for damages and other remedies with respect to any and all past infringement of all said Application, Related US Applications, and Related Foreign Applications, including said inventions and improvements which may have occurred before the date of this Assignment.

IN WI	TNESS WHEREOF, I have be	ereunto set my hand and seal this	<u>24.7%</u> day of
Ja	, 2017.		
			(SEAL)
	$F_{\mathcal{F}}$	XU BENJAMIN FANG	
Witnessed by:	Lux Kuller	Date: 1/25/	17
	Signature		
	MICHAEL KENDALL	_	
	Printed Name of Witness		
Witnessed by:	No VIII	Date:	····
	Signature		
	ARYA KALLA		
	Printed Name of Witness	~	

IN WITNESS WHEREOF, I have	hereunto set my hand and seal this
	LEWIS WONG
Witnessed by:Signature	Date: 1-25-2017
Printed Name of Witness Witnessed by: Signature YU ZAJA Printed Name of Witness	Date:

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transfer and co in and to said /	nveyance unto said Assignee of t Application, Related US Applicat	ereby accepts from Assignor the sale, assignment, he full, exclusive and entire right, title, and interest ions and Related Foreign Applications, by its duly
authorized offi	cer this day of	,2017.
		CAPITAL ONE SERVICES, LLC
		(Assignee)
		Ву:
		Name: Dennis Browne
		Title: Authorized Signatory
Witnessed by:		Date: 3/2////
and a second	Signature	
÷	Printed Name of Witness	
Witnessed by:		Date:
	Signature	
	Printed Name of Witness	