PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5493494

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT	
NATURE OF CONVEYANCE:	Corrective Assignment to correct the ASSIGNOR: AZZOLINI, ALISSON GUSATTI previously recorded on Reel 040452 Frame 0088. Assignor(s) hereby confirms the ASSIGNOR: GUSATTI AZZOLINI, ALISSON.	

CONVEYING PARTY DATA

Name	Execution Date
STUART MICHAEL BOWERS	08/13/2015
HUSSEIN MOHAMED HASSAN MEHANNA	10/05/2015
ALISSON GUSATTI AZZOLINI	03/11/2016
JEFFREY SCOTT DUNN	07/20/2015
RODRIGO BOUCHARDET FARNHAM	07/18/2015
JAMES ROBERT PATON	07/20/2015
ALEKSANDR SIDOROV	07/27/2015
PAMELA SHEN VAGATA	12/14/2015
XIAOWEN XIE	11/27/2015

RECEIVING PARTY DATA

Name:	FACEBOOK, INC.
Street Address:	1601 WILLOW ROAD
City:	MENLO PARK
State/Country:	CALIFORNIA
Postal Code:	94025

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14732501

CORRESPONDENCE DATA

Fax Number: (650)938-5200

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: 4158752023

Email: mnascimento@fenwick.com **Correspondent Name:** MONICA NASCIMENTO FENWICK & WEST LLP Address Line 1: Address Line 2: **801 CALIFORNIA STREET**

Address Line 4: MOUNTAIN VIEW, CALIFORNIA 94041

> **PATENT** REEL: 049010 FRAME: 0452

ATTORNEY DOCKET NUMBER:	26295-39675/US	
NAME OF SUBMITTER:	MONICA NASCIMENTO	
SIGNATURE:	/Monica Nascimento/	
DATE SIGNED:	04/25/2019	
	This document serves as an Oath/Declaration (37 CFR 1.63).	

Total Attachments: 14

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PATENT REEL: 049010 FRAME: 0453

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PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4160619

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
STUART MICHAEL BOWERS	08/13/2015
HUSSEIN MOHAMED HASSAN MEHANNA	10/05/2015
ALISSON GUSATTI AZZOLINI	03/11/2016
JEFFREY SCOTT DUNN	07/20/2015
RODRIGO BOUCHARDET FARNHAM	07/18/2015
JAMES ROBERT PATON	07/20/2015
ALEKSANDR SIDOROV	07/27/2015
PAMELA SHEN VAGATA	12/14/2015
XIAOWEN XIE	11/27/2015

RECEIVING PARTY DATA

Name:	FACEBOOK, INC.
Street Address:	1601 WILLOW ROAD
City:	MENLO PARK
State/Country:	CALIFORNIA
Postal Code:	94025

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14732501

CORRESPONDENCE DATA

Fax Number: (650)838-4350

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: 650-838-4300

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Correspondent Name: PERKINS COIE LLP
Address Line 1: P.O. BOX 1247

Address Line 4: SEATTLE, WASHINGTON 98111-1247

ATTORNEY DOCKET NUMBER: 060406-8194.US01

NAME OF SUBMITTER: EILEEN M. WELPLY, PARALEGAL

PATENT REEL: 049**45**2 FRAME: 0**488**

SIGNATURE:	/Eileen M. Welply/	
DATE SIGNED:	11/29/2016	
Total Attachments: 12		
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PATENT REEL: 049**45**2 FRAME: 0**485**

COMBINED ASSIGNMENT/DECLARATION (37 CFR 1.63)

For good and valuable consideration, the receipt of which is hereby acknowledged, the person(s) named below (referred to as "INVENTOR" whether singular or plural) has sold, assigned, and transferred and does hereby sell, assign, and transfer to Facebook, Inc., a Delaware corporation, having a place of business at 1601 Willow Road, Menlo Park, California 94025 ("ASSIGNEE"), for itself and its successors, transferees, and assignees, the following:

- 1. The entire worldwide right, title, and interest in all inventions and improvements ("SUBJECT MATTER") that are disclosed in the following provisional application filed under 35 U.S.C. § 111(b), non-provisional application filed under 35 U.S.C. § 111(a), international application filed according to the Patent Cooperation Treaty (PCT), or U.S. national phase application filed under 35 U.S.C. § 371 ("APPLICATION"):
 - Application No. 14/732,501, entitled "MACHINE LEARNING SYSTEM INTERFACE" filed on June 5, 2015.
- 2. The entire worldwide right, title, and interest in and to:

 (a) the APPLICATION; (b) all applications claiming priority from the APPLICATION;

 (c) all provisional, utility, divisional, continuation, substitute, renewal, reissue, and other applications related thereto which have been or may be filed in the United States or elsewhere in the world; (d) all patents (including reissues and re-examinations) which may be granted on the applications set forth in (a), (b), and (c) above; and (e) all right of priority in the APPLICATION and in any underlying provisional or foreign application, together with all rights to recover damages for infringement of provisional rights.

INVENTOR agrees that ASSIGNEE may apply for and receive patents for SUBJECT MATTER in ASSIGNEE's own name.

INVENTOR agrees to do the following, when requested, and without further consideration, in order to carry out the intent of this Assignment: (1) execute all oaths, assignments, powers of attorney, applications, and other papers necessary or desirable to fully secure to ASSIGNEE the rights, titles and interests herein conveyed; (2) communicate to ASSIGNEE all known facts relating to the SUBJECT MATTER; and (3) generally do all lawful acts that ASSIGNEE shall consider desirable for securing, maintaining, and enforcing worldwide patent protection relating to the SUBJECT MATTER and for vesting in ASSIGNEE the rights, titles, and interests herein conveyed. INVENTOR further agrees to provide any successor, assign, or legal representative of ASSIGNEE with the benefits and assistance provided to ASSIGNEE hereunder.

INVENTOR represents that INVENTOR has the rights, titles, and interests to convey as set forth herein, and covenants with ASSIGNEE that the INVENTOR has not made and will not hereafter make any assignment, grant, mortgage, license, or other agreement affecting the rights, titles, and interests herein conveyed.

INVENTOR grants the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

1

Atterney Docket No.: 060406-8194,US01-50406-8194,US01/LEGAL125910618,1

MACHINE LEARNING SYSTEM INTERFACE

Date Filed: Application No.: June 5, 2015 14/732,501

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

By signing below, INVENTOR further attests to the following:

- The APPLICATION was made or authorized to be made by INVENTOR.
- INVENTOR believes that INVENTOR is the original inventor or an original joint inventor of a claimed invention in the APPLICATION.
- INVENTOR acknowledges the duty to disclose to the United States Patent and Trademark Office all information known to INVENTOR to be material to patentability as defined in 37 CFR § 1.56, which for a continuation-in-part includes information known to INVENTOR to be material to patentability as defined in 37 CFR § 1.56 that became available between the filing date of the prior patent application and the National or PCT filing date of the continuation-inpart application.
- INVENTOR has reviewed and understands the contents of the APPLICATION, including the claims.

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

Name and Signature	Date of Signature
Stuart Michael Bowers	
Name and/Signature	Date of Signature
1///	1015/2015
Husson Mehanna	
Name and Signature	Date of Signature
Alisson Gusatti Azzolini	
Name and Signature	Date of Signature
Jeffrey Scott Dunn	

Attorney Docket No.: 060406-8194.US01 60406-8194.US01/LEGAL125910618.1

2

PATENT REEL: 049**45**2 FRAME: 0**497**

MACHINE LEARNING SYSTEM INTERFACE

Date Filed: Application No.: June 5, 2015 14/732,501

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

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- INVENTOR acknowledges the duty to disclose to the United States Patent and Trademark Office all information known to INVENTOR to be material to patentability as defined in 37 CFR § 1.56, which for a continuation-in-part includes information known to INVENTOR to be material to patentability as defined in 37 CFR § 1.56 that became available between the filing date of the prior patent application and the National or PCT filing date of the continuation-inpart application.
- INVENTOR has reviewed and understands the contents of the APPLICATION, including the claims.

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

Name and Signature	Date of Signature
	·········
Stuart Michael Bowers	
Ninma and Elianatama	Yanta of Simontone
Name and Signature	Date of Signature
Hussein Mohamed Hassan Mehanna	, X
Name and Signature	Date of Signature
Alisofeedin	March 11, 2016
Alisson Gusatti Azzolini	.41
Name and Signature	Date of Signature
Toffran South Throns	

MACHINE LEARNING SYSTEM INTERFACE

Date Filed: Application No.: June 5, 2015 14/732,801

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

By signing below, INVENTOR further attests to the following:

- The APPLICATION was made or authorized to be made by INVENTOR.
- INVENTOR believes that INVENTOR is the original inventor or an original joint inventor of a claimed invention in the APPLICATION.
- INVENTOR acknowledges the duty to disclose to the United States Patent and Trademark Office all information known to INVENTOR to be material to patentability as defined in 37 CFR § 1.56, which for a continuation-in-part includes information known to INVENTOR to be material to patentability as defined in 37 CFR § 1.56 that became available between the filing date of the prior patent application and the National or PCT filing date of the continuation-in-part application.
- INVENTOR has reviewed and understands the contents of the APPLICATION, including the claims.

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

Name and Signature	Date of Signature
Smart Michael Bowers	
Name and Signature	Date of Signature
Hussein Mohamed Hassan Mehsnna	
Name and Signature	Date of Signature
Alisson Gusatti Azzolini	
Name and Signature	Date of Signature
JANA DANA	7/34/15

Attemety Docket No.: 060406-8194-US01 60406-8194-US01/LEGAL125910618-1

MACHINE LEARNING SYSTEM INTERFACE

Date Filed: Application No.: June 5, 2015 14/732,501

Name and Signature	Date of Signature
7-46-1	2015-07-18
Rodrigo Bouchardet Gardham	
Name and Signature	Date of Signature
James Robert Paton	
Name and Signature	Date of Signature
Aleksandr Sidorov	
Name and Signature	Date of Signature
Pamela Shen Vagata	
Name and Signature	Date of Signature
Xiaowen Xie	

MACHINE LEARNING SYSTEM INTERFACE

Date Filed: Application No.: June 5, 2015 14/732,501

Name and Signature	Date of Signature
Rodrigo Bouchardet Farnham	
Name and Signature	Date of Signature
Qa Ba	July 20, 2015
James Robert Paton	
Name and Signature	Date of Signature
Aleksandr Sidorov	· · · · · · · · · · · · · · · · · · ·
Name and Signature	Date of Signature
Pamela Shen Vagata	
Name and Signature	Date of Signature
Xianwen Xie	

Atterney Docket No.: 060406-8194,US01 60406-8194,US01/LBGAL/125910618.1

T	itle:	

MACHINE LEARNING SYSTEM INTERFACE

Date Filed:
Application No.:

June 5, 2015 14/732,501

Name and Signature	Date of Signature
Rodrigo Bouchardet Farnham	
Name and Signature	Date of Signature
James Robert Paton	·
Name and Signature Aleksandr Sidorov	Date of Signature 04/24/2015
Name and Signature	Date of Signature
Pamela Shen Vagata	
Name and Signature	Date of Signature
Visawen Vie	

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MACHINE LEARNING SYSTEM INTERFACE

Date Filed: Application No.: June 5, 2015 14/732,501

Name and Signature	Date of Signature
Rodrigo Bouchardet Farnham	
Name and Signature	Date of Signature
James Robert Paton	
Name and Signature	Date of Signature
Aleksandr Sidorov	
Name and Signature	Date of Signature
Palmela Shen Vagata	12/14/2015
Name and Signature	Date of Signature
Xiaowen Xie	

MACHINE LEARNING SYSTEM INTERFACE

Date Filed: Application No.2 June 5, 2015 14/732,501

Name and Signature	Date of Signature
Rodrigo Bouchardet Farnham	
Name and Signature	Date of Signature
James Robert Paton	
Name and Signature	Date of Signature
Aleksandr Sidorov	
Name and Signature	Date of Signature
Pamela Shen Vagata	
Name and Signature	Date of Signature
ACZE	11/27/2015
Xiaowen Xie	

COMBINED ASSIGNMENT/DECLARATION (37 CFR 1.63)

For good and valuable consideration, the receipt of which is hereby acknowledged, the person(s) named below (referred to as "INVENTOR" whether singular or plural) has sold, assigned, and transferred and does hereby sell, assign, and transfer to **Facebook, Inc.**, a Delaware corporation, having a place of business at 1601 Willow Road, Menlo Park, California 94025 ("ASSIGNEE"), for itself and its successors, transferees, and assignees, the following:

- 1. The entire worldwide right, title, and interest in all inventions and improvements ("SUBJECT MATTER") that are disclosed in the following provisional application filed under 35 U.S.C. § 111(b), non-provisional application filed under 35 U.S.C. § 111(a), international application filed according to the Patent Cooperation Treaty (PCT), or U.S. national phase application filed under 35 U.S.C. § 371 ("APPLICATION"):
 - Application No. 14/732,501, entitled "MACHINE LEARNING SYSTEM INTERFACE" filed on June 5, 2015.
 - 2. The entire worldwide right, title, and interest in and to:
- (a) the APPLICATION; (b) all applications claiming priority from the APPLICATION; (c) all provisional, utility, divisional, continuation, substitute, renewal, reissue, and other applications related thereto which have been or may be filed in the United States or elsewhere in the world; (d) all patents (including reissues and re-examinations) which may be granted on the applications set forth in (a), (b), and (c) above; and (e) all right of priority in the APPLICATION and in any underlying provisional or foreign application, together with all rights to recover damages for infringement of provisional rights.

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INVENTOR grants the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

PATENT REEL: 049**45**2 FRAME: 0**495** Title: MACHINE LEARNING SYSTEM INTERFACE

Date Filed: **June 5, 2015** Application No.: **14/732,501**

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Name and Signature	Date of Signature
5 2	8/13/2015
Stuart Michael Bowers	
Name and Signature	Date of Signature
Hussein Mohamed Hassan Mehanna	
Name and Signature	Date of Signature
Alisson Gusatti Azzolini	
Name and Signature	Date of Signature
Jeffrey Scott Dunn	

2

Attorney Docket No.: 060406-8194.US01 60406-8194.US01/LEGAL125910618.1

PA1

Title: MACHINE LEARNING SYSTEM INTERFACE

Date Filed: **June 5, 2015**Application No.: **14/732,501**

Name and Signature	Date of Signature
Rodrigo Bouchardet Farnham	
Name and Signature	Date of Signature
James Robert Paton	
Name and Signature	Date of Signature
Aleksandr Sidorov	
Name and Signature	Date of Signature
Pamela Shen Vagata	<u></u>
Name and Signature	Date of Signature
Xiaowen Xie	

Attorney Docket No.: 060406-8194.US01 60406-8194.US01/LEGAL125910618.1

RECORDED: 04/29/2010

PATENT REEL: 049**65**0 FRAME: 0**467**