

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5158189

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| YINGZE BAO | 08/10/2018 |
| MINGYU CHEN | 08/10/2018 |
| RECEIVING PARTY DATA | |
| Name: | BAIDU USA LLC |
| Street Address: | 1195 BORDEAUX DR. |
| City: | SUNNYVALE |
| State/Country: | CALIFORNIA |
| Postal Code: | 94089 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 16102642 |
| CORRESPONDENCE DATA | |
| Fax Number: | (650)856-0542 |
| <i>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.</i> | |
| Phone: | 650-353-3783 |
| Email: | docket2@northweber.com |
| Correspondent Name: | NORTH WEBER & BAUGH LLP |
| Address Line 1: | 3260 HILLVIEW AVE., 1ST FLOOR |
| Address Line 4: | PALO ALTO, CALIFORNIA 94304 |
| ATTORNEY DOCKET NUMBER: | 28888-2158 |
| NAME OF SUBMITTER: | ROMITA PIROYAN |
| SIGNATURE: | /Romita Piroyan/ |
| DATE SIGNED: | 09/25/2018 |
| Total Attachments: 4 | |
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ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, the individual(s) named below (hereinafter "INVENTOR" whether singular or plural) has sold, assigned, transferred, and set over, and hereby sells, assigns, transfers and sets over, to Baidu USA LLC, a corporation of the State of California, having a place of business at 1195 Bordeaux Dr., Sunnyvale, CA 94089 ("ASSIGNEE"), for itself and its successors, transferees, and assignees, the following:

1. The full and exclusive worldwide right, title, and interest in and to all inventions and improvements ("SUBJECT MATTER") that are disclosed in the U.S. patent application, entitled "SYSTEMS AND METHODS TO IMPROVE VISUAL FEATURE DETECTION USING MOTION-RELATED DATA" ("APPLICATION"),

☒ which is a nonprovisional application

☒ bearing Application No. 16/102,642, and filed on August 13, 2018.

2. The entire worldwide right, title, and interest in and to the APPLICATION and all applications claiming priority to the APPLICATION or having related SUBJECT MATTER to the APPLICATION, including all such utility, divisional, continuation, substitute, renewal, reissue, international, or other related applications and all rights of priority in the APPLICATION, together with all rights to recover damages for infringement.

INVENTOR hereby authorizes and requests the Commissioner of the U.S. Patent and Trademark Office, and Patent Office Officials in all foreign countries, to issue to the ASSIGNEE any and all patents which may be granted from the APPLICATION.

INVENTOR will, without further consideration, communicate to the ASSIGNEE any facts known to the INVENTOR regarding the SUBJECT MATTER, testify in any legal proceeding, sign all lawful papers, execute all oaths, assignments, powers of attorney, applications and any other paper desired by ASSIGNEE to obtain, perfect, or secure to ASSIGNEE any and all of the rights, titles, and interests herein conveyed, and to maintain, enforce, and defend these rights, titles, and interests in the United States and all foreign countries. INVENTOR further agrees to provide any successor,

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| Title: | SYSTEMS AND METHODS TO IMPROVE VISUAL FEATURE DETECTION USING MOTION-RELATED DATA |
| Inventor(s): | Yingze Bao <i>et al.</i> |
| Appl. No.: | 16/102,642 |
| Filing Date: | August 13, 2018 |
| Docket No.: | 28888-2158 (BN170825USN2) |

assign, or legal representative of ASSIGNEE with the benefits and assistance provided to ASSIGNEE herein.

INVENTOR represents that the INVENTOR, at the time of the execution of this Assignment, is the sole and lawful owner of the entire rights, titles, and interests in and to the SUBJECT MATTER as set forth in the APPLICATION, and that the SUBJECT MATTER is unencumbered, and that the INVENTOR has good and full right and lawful authority to sell and convey the SUBJECT MATTER in the manner herein set forth.

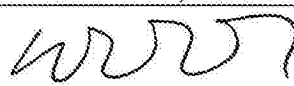
INVENTOR covenants with ASSIGNEE that the INVENTOR has not made and will not hereafter make any assignment, grant, mortgage, license, or other agreement affecting the rights, titles, and interests herein conveyed.

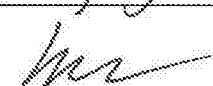
INVENTOR agrees to, and hereby acknowledges, that the ASSIGNEE may apply for and receive patents related to the APPLICATION or SUBJECT MATTER.

INVENTOR grants the attorney of record for the APPLICATION the power to insert on this Assignment any further identification, including the application number and filing date, which may be desirable or necessary to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

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. INVENTOR signature blocks are located on the following pages.

Title: SYSTEMS AND METHODS TO IMPROVE VISUAL FEATURE DETECTION USING
MOTION-RELATED DATA
Inventor(s): Yingze Bao *et al.*
Appl. No.: 16/102,642
Filing Date: August 13, 2018
Docket No.: 28888-2158 (BN170825USN2)

INVENTOR Name: Yingze BAO
INVENTOR Address: 1920 Silverwood Ave.
Mountain View, CA 94043
INVENTOR Signature 
Date of Signature: 8/5/18

Witnessed By: Haofeng Kou
[Print Name]
Witness Signature: 
Date of Signature: 8/10/18

State of _____
County of _____

On _____, before me _____ personally appeared,
[Date] [Name and Title of Officer]
_____, who proved to me on the basis of satisfactory evidence to be the
[INVENTOR]
person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that
he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted,
executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of _____
that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

Title: SYSTEMS AND METHODS TO IMPROVE VISUAL FEATURE DETECTION USING
MOTION-RELATED DATA
Inventor(s): Yingze Bao *et al.*
Appl. No.: 16/102,642
Filing Date: August 13, 2018
Docket No.: 28888-2158 (BN170825USN2)

INVENTOR Name: Mingyu CHEN

INVENTOR Address: 550 Moreland Way, Apt No. 2503
Santa Clara, CA 95054

INVENTOR Signature

Date of Signature:

08.10.2018

Witnessed By:

Haofeng Kou

[Print Name]

Witness Signature:

Date of Signature:

8/10/18

State of _____)
County of _____)

On _____, before me _____ personally appeared,
[Date] [Name and Title of Officer]

_____, who proved to me on the basis of satisfactory evidence to be the
[INVENTOR]

person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of _____
that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

(Seal)