PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1   EPAS ID: PAT3818945
Stylesheet Version v1.2

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
GREGORY DIAMOS	03/24/2016
AWNI HANNUN	03/28/2016
BRYAN CATANZARO	03/24/2016
DARIO AMODEI	03/29/2016
ERICH ELSEN	03/24/2016
JESSE ENGEL	03/24/2016
SHUBHABRATA SENGUPTA	03/24/2016

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:	15091413

CORRESPONDENCE DATA

Fax Number:	(650)856-0542

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:	650-353-3783
Email:	docket2@northweber.com
Correspondent Name:	NORTH WEBER & BAUGH LLP--BAIDU
Address Line 1:	279 E. BAYSHORE ROAD, SUITE 210
Address Line 4:	PALO ALTO, CALIFORNIA 94303

ATTORNEY DOCKET NUMBER:	28888-1983
NAME OF SUBMITTER:	ROMITA PIROYAN
SIGNATURE:	/ROMITA PIROYAN/
DATE SIGNED:	04/06/2016

Total Attachments: 9
source=1983_Assignment#page1.tif
source=1983_Assignment#page2.tif
source=1983_Assignment#page3.tif
source=1983_Assignment#page4.tif
source=1983_Assignment#page5.tif
source=1983_Assignment#page6.tif
source=1983_Assignment#page7.tif
source=1983_Assignment#page8.tif
source=1983_Assignment#page9.tif

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 FOR A MULTI-CORE OPTIMIZED RECURRENT NEURAL NETWORK" ("APPLICATION"),

    ☒ which is a non-provisional application
        ☒ bearing Application No. 15/091,413, and filed on April 5, 2016.

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, 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 FOR A MULTI-CORE OPTIMIZED RECURRENT NEURAL NETWORK
Inventor(s):	Diamos *et al.*
Appl. No.:	15/091,413
Filing Date:	April 5, 2016
Docket No.:	28888-1983 (BN151010USN1)

INVENTOR Name: Gregory Diamos

INVENTOR Address: 6191 Cloverhill Dr.

San Jose, CA 95120

INVENTOR Signature

Date of Signature: 3/24/2016

Witnessed By: _____
[Print Name]

Witness Signature: _____

Date of Signature: _____

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.

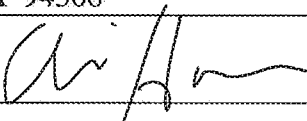WITNESS my hand and official seal.

Signature _____   (Seal)

Page 3 of 9

INVENTOR Name: Awni Hannun

INVENTOR Address: 416 Leland Ave

Palo Alto, CA 94306

INVENTOR Signature

Date of Signature: 3/28/2016

Witnessed By: _____

[Print Name]

Witness Signature: _____

Date of Signature: _____

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 FOR A MULTI-CORE OPTIMIZED RECURRENT NEURAL NETWORK
Inventor(s):	Diamos *et al.*
Appl. No.:	15/091,413
Filing Date:	April 5, 2016
Docket No.:	28888-1983 (BN151010USN1)

INVENTOR Name: Bryan Catanzaro

INVENTOR Address: 10439 N. Stelling Rd.

Cupertino, CA 95014

INVENTOR Signature

Date of Signature:

Witnessed By: _____

[Print Name]

Witness Signature: _____

Date of Signature: _____

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)
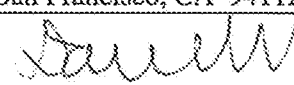acted, executed the instrument.

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)

Page 5 of 9

Title:	SYSTEMS AND METHODS FOR A MULTI-CORE OPTIMIZED RECURRENT NEURAL NETWORK
Inventor(s):	Diamos *et al.*
Appl. No.:	15/091,413
Filing Date:	April 5, 2016
Docket No.:	28888-1983 (BN151010USN1)

INVENTOR Name: Dario Amodei

INVENTOR Address: 7 Delano Ave

San Francisco, CA 94112

INVENTOR Signature

Date of Signature: 3/29/2016

Witnessed By: _____
[Print Name]

Witness Signature: _____

Date of Signature: _____

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 FOR A MULTI-CORE OPTIMIZED RECURRENT NEURAL NETWORK
Inventor(s):	Diamos *et al.*
Appl. No.:	15/091,413
Filing Date:	April 5, 2016
Docket No.:	28888-1983 (BN151010USN1)

INVENTOR Name: Erich Elsen

INVENTOR Address: 2541 Betlo Ave

Mountainview, CA 94043

INVENTOR Signature

Date of Signature: 3/24/16

Witnessed By: _____
[Print Name]

Witness Signature: _____

Date of Signature: _____

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 FOR A MULTI-CORE OPTIMIZED RECURRENT NEURAL NETWORK
Inventor(s):	Diamos *et al.*
Appl. No.:	15/091,413
Filing Date:	April 5, 2016
Docket No.:	28888-1983 (BN151010USN1)

INVENTOR Name: Jesse Engel

INVENTOR Address: 4312 Telegraph Ave Apt#1

Oakland, CA 94609

INVENTOR Signature   *Jesse Engel*

Date of Signature: 03/24/2016

Witnessed By: _____
                                        [Print Name]

Witness Signature: _____

Date of Signature: _____

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 FOR A MULTI-CORE OPTIMIZED RECURRENT NEURAL NETWORK
Inventor(s):	Diamos *et al.*
Appl. No.:	15/091,413
Filing Date:	April 5, 2016
Docket No.:	28888-1983 (BN151010USN1)

INVENTOR Name: Shubhabrata Sengupta

INVENTOR Address: 2125 Gordon Ave

                      Menlo Park, CA 94025

INVENTOR Signature   _[signature]_

Date of Signature: 24ᵗ Mar 2016

Witnessed By:
[Print Name]

Witness Signature:

Date of Signature:

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)