PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MICHAEL SULLIVAN	12/13/2017
SIVA HARI	12/14/2017
BRIAN ZIMMER	12/13/2017
TIMOTHY TSAI	12/13/2017
STEPHEN W. KECKLER	12/13/2017

RECEIVING PARTY DATA

Name:	NVIDIA CORP.	
Street Address:	2701 SAN TOMAS EXPRESSWAY	
City:	SANTA CLARA	
State/Country:	CALIFORNIA	
Postal Code:	95050	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15845314

CORRESPONDENCE DATA

Fax Number: (360)294-6426

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: 360-737-1748

Email: jane@fspllc.com

Correspondent Name: CHARLES A. MIRHO

Address Line 1: 431 H STREET

Address Line 4: CRESCENT CITY, CALIFORNIA 95531

ATTORNEY DOCKET NUMBER:	FSP1289
NAME OF SUBMITTER:	CHARLES A. MIRHO
SIGNATURE:	/Charles A. Mirho/
DATE SIGNED:	02/07/2018

Total Attachments: 3

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> PATENT REEL: 044854 FRAME: 0164

ASSIGNMENT OF PATENT APPLICATION

Attorney Docket No.: FSP1289

Application: 15/845,314 Filed: 12/18/2017

Title: SYSTEM AND METHODS FOR HARDWARE-SOFTWARE COOPERATIVE PIPELINE

ERROR DETECTION

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I/we, the undersigned,

Michael Sullivan

Siva Hari

Brian Zimmer

Timothy Tsai

Stephen W. Keckler

hereby sell, assign, and transfer to

the undersigned, contributed material disclosed and/or claimed:

NVIDIA Corp.

having a principal place of business at **2701 San Tomas Expressway, Santa Clara, CA, 95050, USA**, ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all foreign countries, in and to any and all inventions or improvements that are disclosed in the application (provisional or non-provisional) for the United States patent which may have a declaration executed by the undersigned prior hereto or concurrently herewith and is entitled

SYSTEM AND METHODS FOR HARDWARE-SOFTWARE COOPERATIVE PIPELINE ERROR DETECTION

said patent application also identified as follows (when known): $15/845,314$	filed on, ^{12/18/2017}
(the undersigned authorizes NVIDIA Corp. to fill in the application num	ber and filing date, when known)
and to each and all of the following applications which claim priority to the abo	ove-identified application and to which I,

[I/we hereby authorize an attorney or agent for said Assignee to insert below the application number and filing date of said patent application claiming priority, when known.]

and in and to said application (provisional or non-provisional) and all provisional applications, non-provisional applications, utility applications, design applications, divisional applications, continuation applications, continued prosecution applications, continuation-in-part applications, substitute applications, renewal applications, reissue applications, reexaminations, extensions, and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said inventions or improvements; and in and to all original patents, reissued patents, reexamination certificates, and extensions, that have been or shall be issued in the United States and all foreign countries on said inventions or improvements; and in and to all rights of priority resulting from the filing of said applications;

agree that said Assignee may apply for and receive a patent or patents for said inventions or improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns,

PATENT REEL: 044854 FRAME: 0165 and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all provisional applications, non-provisional applications, utility applications, design applications, divisional applications, continuation applications, continued prosecution applications, continuation-in-part applications, substitute applications, renewal applications, reissue applications, reexaminations, extensions, and all other patent applications on any and all said inventions or improvements;

execute all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and representatives all facts known to the undersigned relating to said inventions or improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or representatives in securing and maintaining proper patent protection for said inventions or improvements and for vesting title to said inventions or improvements, and all applications for patents and all patents on said inventions or improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Each Inventor: Please Sign and Date Below:

Mic	hael	l Sul	I	livar	١
14110	, iuc	Jui		IVUI	

Siva Hari

Brian Zimmer

Timothy Tsai

Stephen W. Keckler

Docusigned by: Michael Sullivan	12/13/2017	
042DEEB906884B7		_ Michael Sullivan
Signature	Date	Printed/Typed Name
Docusigned by: Siva Han	12/14/2017	
E4BD8518D965439		_ Siva Hari
Signature	Date	Printed/Typed Name
DocuSigned by:	12/13/2017	
E3100009E7B2455		_ Brian Zimmer
Signature	Date	Printed/Typed Name
Docusigned by: Simothy Jsai	12/13/2017	
52819CE309584A8		_ Timothy Tsai
Signature	Date	Printed/Typed Name
Docusigned by: Stephen W. Keckler	12/13/2017	
CC3F1AD2D7F14EC		_ Stephen W. Keckler
Signature	Date	Printed/Typed Name
Stephen W. keckler	12/13/2017 , Date	_ Stephen W. Keckl Printed/Typed Nam

PATENT REEL: 044854 FRAME: 0166 DocuSign Envelope ID: 21A0CB3C-B820-438E-89C1-028D383E39A8

<u>Assignment Document Return Address:</u>

NVIDIA Corp.

2701 San Tomas Expressway

Santa Clara, CA, 95050, USA

PATENT REEL: 044854 FRAME: 0167

RECORDED: 02/07/2018