508451426 03/21/2024

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 Assignment ID: PATI110842

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
Weixi Zhu	03/18/2024
Guilherme Cox	03/13/2024

### **RECEIVING PARTY DATA**

Company Name:	NVIDIA Corporation
Street Address:	2788 SAN TOMAS EXPRESSWAY
City:	SANTA CLARA
State/Country:	CALIFORNIA
Postal Code:	95051

## **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	17868668

### CORRESPONDENCE DATA

**Fax Number:** 2066223150

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.

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**Email:** patentdocket@dwt.com,NVIDIAPatents@dwt.com

Correspondent Name: DAVIS WRIGHT TREMAINE LLP
Address Line 1: 920 FIFTH AVENUE, SUITE 3300
Address Line 4: SEATTLE, WASHINGTON 98104-1610

ATTORNEY DOCKET NUMBER:	0112912-534US0
NAME OF SUBMITTER:	Nadin Hamoui-Najjar
SIGNATURE:	Nadin Hamoui-Najjar
DATE SIGNED:	03/21/2024

### **Total Attachments: 10**

source=2024-03-13 21-HU-1649US02 _0112912-534US0_ Assignment and Declaration#page1.tif
source=2024-03-13 21-HU-1649US02 _0112912-534US0_ Assignment and Declaration#page2.tif
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PATENT 508451426 REEL: 066854 FRAME: 0879

U.S. Patent Appln. No. 17/868,668

Attorney Docket No. 0112912-534US0

Filing Date July 19, 2022

Client Docket No. 21-HU-1649US02

#### PARTIES TO THE ASSIGNMENT

Assignor(s):

Weixi Zhu 2788 San Tomas Expressway Santa Clara, CA 95051

**Guilherme Cox** 

2788 San Tomas Expressway Santa Clara, CA 95051

Assignee:

**NVIDIA Corporation** 2788 San Tomas Expressway Santa Clara, CA 95051

### **AGREEMENT**

WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled "UNIFIED VIRTUAL MEMORY MANAGEMENT IN HETEROGENEOUS COMPUTING SYSTEMS" (Invention) for which a non-provisional application for United States Letters Patent (Application): was filed on July 19, 2022, and accorded U.S. Application No. 17/868,668; or will be filed concurrently with the submission of this executed PATENT ASSIGNMENT for recordation.

ASSIGNOR(S) hereby authorizes and requests ASSIGNEE'S legal representatives, of Davis Wright Tremaine LLP, associated with Customer No. 119055, to insert in the header above and here in parentheses (U.S. Patent Application No. 17/868,668, filed July 19, 2022) this application's U.S. application number and filing date, when known.

WHEREAS, ASSIGNEE, a corporation of the State of Delaware, is desirous of acquiring the entire right, title and interest in and to the Invention and in and to any letters patent that may be granted therefor in the United States and in any and all foreign countries.

U.S. Patent Appln. No. 17/868,668

Attorney Docket No. 0112912-534US0

Filing Date July 19, 2022

Client Docket No. 21-HU-1649US02

Title of Invention: UNIFIED VIRTUAL MEMORY MANAGEMENT IN HETEROGENEOUS COMPUTING

**SYSTEMS** 

Inventors: Weixi Zhu, Guilherme Cox,

NOW, THEREFORE, in exchange for good and valuable consideration, the receipt of which

is hereby acknowledged, ASSIGNOR(S) hereby sell, assign and transfer unto ASSIGNEE its

successors and assigns, the entire right, title and interest in and to said Invention and any

improvements thereto, said Application and any and all letters patent which may be granted for

said Invention in the United States of America and its territorial possessions and in any and all

foreign countries, and in any and all provisional, divisions, reissues, re-examinations and

continuations thereof, including the right to file foreign applications directly in the name of

ASSIGNEE and to claim priority rights deriving from said Application to which said foreign

applications are entitled by virtue of international convention, treaty or otherwise, said Invention,

Application and all letters patent on said Invention to be held and enjoyed by ASSIGNEE and its

successors and assigns for their use and benefit and of their successors and assigns as fully and

entirely as the same would have been held and enjoyed by ASSIGNOR(S) had this assignment,

transfer and sale not been made. ASSIGNOR(S) hereby authorize and request the Commissioner

of Patents and Trademarks, as well as all other applicable patent offices throughout the world, to

issue all letters patent on said Invention to ASSIGNEE. ASSIGNOR(S) agree to execute all

instruments and documents required for the making and prosecution of applications for United

States and foreign letters patent on said Invention, for litigation regarding said letters patent, or

for the purpose of protecting title to said Invention or letters patent therefor.

AND ASSIGNOR(S) DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its

successors, legal representatives, and assigns all claims for damages and all remedies arising out

of any violation of the rights assigned hereby that may have accrued prior to the date of

Page 2 of 5

U.S. Patent Appln. No. 17/868,668

Attorney Docket No. 0112912-534US0

Filing Date July 19, 2022

Client Docket No. 21-HU-1649US02

Title of Invention: UNIFIED VIRTUAL MEMORY MANAGEMENT IN HETEROGENEOUS COMPUTING

**SYSTEMS** 

Inventors: Weixi Zhu, Guilherme Cox,

assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue

for, collect, and retain damages for past infringements of said letters patent before or after

issuance.

AND ASSIGNOR(S) DOES HEREBY covenant and agree that ASSIGNOR(S) will communicate

to ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR

respecting the Invention or said Application, and testify in any legal proceeding, assist in the

preparation of any other patent property relating to the Application and the Invention or any

improvements made thereto, sign/execute all lawful papers, provide all requested documents,

execute and make all rightful oaths and/or declarations in connection with the Application and

the Invention including any improvements made thereto, any patent applications filed therefrom,

and any continuing application filed from any of the aforementioned applications, and generally

do everything possible to aid ASSIGNEE, its successors, legal representatives and assigns, to obtain

and enforce proper patent protection for the Invention in all countries. These provisions are

binding upon ASSIGNOR's heirs, legal representatives, administrators, and assigns.

U.S. Patent Appln. No. <u>17/868,668</u>	Attorney Docket No. <u>0112912-534US0</u>
Filing Date <u>July 19, 2022</u>	Client Docket No. 21-HU-1649US02
Title of Invention: <u>UNIFIED VIRTUAL MEMOR SYSTEMS</u>	Y MANAGEMENT IN HETEROGENEOUS COMPUTING
Inventors: Weixi Zhu, Guilherme Cox,	
DECLARATION	
As a below named inventor, I hereby declare	e that:
This declaration is directed to:	
$oxedsymbol{\square}$ the attached application; or	
igstyle igstyle United States Patent Application	number <u>17/868,668</u> , filed on <u>July 19, 2022</u> ; or
PCT International Application nu	mber filed on
The above-identified application was made of the line	or authorized to be made by me.  n original joint inventor of a claimed Invention in the
	ontents of the above-identified application, and Patent & Trademark Office all information known to fined in 37 CFR 1.56.
I hereby acknowledge that any willful false st	atement made in this declaration is punishable under
18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.	
DocuSigned by:  Weixi Zhu  DocuSigned by:  Weixi Zhu  DocuSigned by:  Weixi Zhu	
18 March 2024 Date	

Page 4 of 5 **PATENT** REEL: 066854 FRAME: 0884

U.S. Patent Appln. No. <u>17/868,668</u>	Attorney Docket No. <u>0112912-534US0</u>
Filing Date July 19, 2022	Client Docket No. 21-HU-1649US02
Title of Invention: <u>UNIFIED VIRTUAL MEMORY MASYSTEMS</u>	NAGEMENT IN HETEROGENEOUS COMPUTING
Inventors: Weixi Zhu, Guilherme Cox,	
DECLARATION	
As a below named inventor, I hereby declare that	t:
This declaration is directed to:	
the attached application; or	
igotimes United States Patent Application num	ber <u>17/868,668</u> , filed on <u>July 19, 2022</u> ; or
PCT International Application number	filed on
The above-identified application was made or au	thorized to be made by me.
I believe that I am the original inventor or an original application.	ginal joint inventor of a claimed Invention in the
I have reviewed and understand the content acknowledge the duty to disclose to the US Pate me to be material to the patentability as defined	nt & Trademark Office all information known to
I hereby acknowledge that any willful false statem 18 USC 1001 by fine or imprisonment of not more	·
Date	

U.S. Patent Appln. No. <u>17/868,668</u>

Attorney Docket No. 0112912-534US0

Filing Date July 19, 2022

Client Docket No. 21-HU-1649US02

**PARTIES TO THE ASSIGNMENT** 

Assignor(s):

Weixi Zhu

2788 San Tomas Expressway Santa Clara, CA 95051

**Guilherme Cox** 

2788 San Tomas Expressway Santa Clara, CA 95051

<u>Assignee:</u>

NVIDIA Corporation 2788 San Tomas Expressway Santa Clara, CA 95051

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(Invention) for which a non-provisional application for United States Letters Patent (Application):

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entire right, title and interest in and to the Invention and in and to any letters patent that may be

granted therefor in the United States and in any and all foreign countries.

Page 1 of 5 PATENT

REEL: 066854 FRAME: 0886

U.S. Patent Appln. No. 17/868,668

Attorney Docket No. 0112912-534US0

Filing Date <u>July 19, 2022</u>

Client Docket No. 21-HU-1649US02

Title of Invention: UNIFIED VIRTUAL MEMORY MANAGEMENT IN HETEROGENEOUS COMPUTING

**SYSTEMS** 

Inventors: Weixi Zhu, Guilherme Cox,

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said Invention in the United States of America and its territorial possessions and in any and all

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applications are entitled by virtue of international convention, treaty or otherwise, said Invention,

Application and all letters patent on said Invention to be held and enjoyed by ASSIGNEE and its

successors and assigns for their use and benefit and of their successors and assigns as fully and

entirely as the same would have been held and enjoyed by ASSIGNOR(S) had this assignment,

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successors, legal representatives, and assigns all claims for damages and all remedies arising out

of any violation of the rights assigned hereby that may have accrued prior to the date of

Page 2 of 5

PATENT

**REEL: 066854 FRAME: 0887** 

U.S. Patent Appln. No. 17/868,668

Attorney Docket No. 0112912-534US0

Filing Date <u>July 19, 2022</u>

Client Docket No. 21-HU-1649US02

Title of Invention: UNIFIED VIRTUAL MEMORY MANAGEMENT IN HETEROGENEOUS COMPUTING

**SYSTEMS** 

Inventors: Weixi Zhu, Guilherme Cox,

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to ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR

respecting the Invention or said Application, and testify in any legal proceeding, assist in the

preparation of any other patent property relating to the Application and the Invention or any

improvements made thereto, sign/execute all lawful papers, provide all requested documents,

execute and make all rightful oaths and/or declarations in connection with the Application and

the Invention including any improvements made thereto, any patent applications filed therefrom,

and any continuing application filed from any of the aforementioned applications, and generally

do everything possible to aid ASSIGNEE, its successors, legal representatives and assigns, to obtain

and enforce proper patent protection for the Invention in all countries. These provisions are

binding upon ASSIGNOR's heirs, legal representatives, administrators, and assigns.

Page 3 of 5

U.S. Patent Appln. No. <u>17/868,668</u>	Attorney Docket No. <u>0112912-534US0</u>
Filing Date <u>July 19, 2022</u>	Client Docket No. 21-HU-1649US02
Title of Invention: <u>UNIFIED VIRTUAL MEMORY MANASYSTEMS</u>	AGEMENT IN HETEROGENEOUS COMPUTING
Inventors: Weixi Zhu, Guilherme Cox,	
DECLARATION	
As a below named inventor, I hereby declare that:	
This declaration is directed to:	
the attached application; or	
United States Patent Application number	er <u>17/868,668</u> , filed on <u>July 19, 2022</u> ; or
PCT International Application number _	filed on
The above-identified application was made or auth	orized to be made by me.
I believe that I am the original inventor or an origin	al joint inventor of a claimed Invention in the
application.	
I have reviewed and understand the contents	s of the above-identified application, and
acknowledge the duty to disclose to the US Patent	& Trademark Office all information known to
me to be material to the patentability as defined in	37 CFR 1.56.
I hereby acknowledge that any willful false statemen	nt made in this declaration is punishable under
18 USC 1001 by fine or imprisonment of not more t	han five (5) years, or both.
Weixi Zhu	
Date	

Page 4 of 5 **PATENT REEL: 066854 FRAME: 0889** 

U.S. Patent Appln. No. <u>17/868,668</u>	Attorney Docket No. <u>0112912-534USC</u>
Filing Date <u>July 19, 2022</u>	Client Docket No. 21-HU-1649US02
Title of Invention: <u>UNIFIED VIRTUAL MEMORY MANAGE</u> <u>SYSTEMS</u>	EMENT IN HETEROGENEOUS COMPUTING
Inventors: Weixi Zhu, Guilherme Cox,	
DECLARATION	
As a below named inventor, I hereby declare that:	
This declaration is directed to:	
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$igstyle igstyle$ United States Patent Application number $oldsymbol{1}$	<u>17/868,668</u> , filed on <u>July 19, 2022</u> ; or
PCT International Application number	filed on
The above-identified application was made or authorize	zed to be made by me.
I believe that I am the original inventor or an original	joint inventor of a claimed Invention in the
application.	
I have reviewed and understand the contents of acknowledge the duty to disclose to the US Patent & me to be material to the patentability as defined in 37	Trademark Office all information known to
I hereby acknowledge that any willful false statement r	nade in this declaration is punishable under
18 USC 1001 by fine or imprisonment of not more than	n five (5) years, or both.
DocuSigned by:  Guillerme (ox  BE27889132F0472  Guilherme Cox	
3/13/2024	
Date	

Page 5 of 5 **PATENT REEL: 066854 FRAME: 0890** 

**RECORDED: 03/21/2024**