

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT7606427

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
RUIZHI DENG	04/27/2020
YANSHUAI CAO	04/27/2020
BO CHANG	03/31/2019
MARCUS BRUBAKER	04/07/2020
RECEIVING PARTY DATA	
Name:	ROYAL BANK OF CANADA
Street Address:	1 PLACE VILLE MARIE
Internal Address:	6TH FLOOR, NORTH WING
City:	MONTREAL,
State/Country:	CANADA
Postal Code:	H3C 3A9
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16881768
CORRESPONDENCE DATA	
Fax Number:	(416)216-3930
<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>	
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Correspondent Name:	NORTON ROSE FULBRIGHT CANADA LLP
Address Line 1:	1, PLACE VILLE MARIE
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Address Line 4:	MONTREAL, CANADA H3B 1R1
ATTORNEY DOCKET NUMBER:	05007268-195US
NAME OF SUBMITTER:	STEPHEN Y. LAM
SIGNATURE:	/Stephen Y. Lam/
DATE SIGNED:	10/24/2022
Total Attachments: 7	

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ASSIGNMENT (Worldwide)

WHEREAS,

- (1) **Ruizhi Deng** of c/o Royal Bank of Canada, 6th Floor, North Wing, 1 Place Ville Marie, Montreal, Quebec, H3C 3A9, Canada;
- (2) **Yanshuai Cao** of c/o Royal Bank of Canada, 6th Floor, North Wing, 1 Place Ville Marie, Montreal, Quebec, H3C 3A9, Canada;
- (3) **Bo Chang** of c/o Royal Bank of Canada, 6th Floor, North Wing, 1 Place Ville Marie, Montreal, Quebec, H3C 3A9, Canada; and
- (4) **Marcus Brubaker** of c/o Royal Bank of Canada, 6th Floor, North Wing, 1 Place Ville Marie, Montreal, Quebec, H3C 3A9, Canada;

hereinafter referred to, separately and collectively, as "ASSIGNORS", and whose full post office address is c/o Royal Bank of Canada, 6th Floor, North Wing, 1 Place Ville Marie, Montreal, Quebec, H3C 3A9, Canada, have made an invention relating to and entitled:

SYSTEM AND METHOD FOR MACHINE LEARNING ARCHITECTURE WITH VARIATIONAL HYPER-RNN

hereinafter referred to as the Invention, which Invention is described for example in the appended draft patent application, which Invention is to be filed as one or more applications for Letters Patent hereinafter referred to as the Applications;

AND WHEREAS, **ROYAL BANK OF CANADA**, a Canadian Chartered Bank hereinafter referred to as Assignee, whose full post office address is 6th Floor, North Wing, 1 Place Ville Marie, Montreal, Quebec H3C 3A9, Canada, desires among other things to acquire Assignors' entire right, title, interest and benefit for United States, Canada and all other countries and jurisdictions in and to the Invention and Application;

NOW THEREFORE, in consideration of the sum of Five Dollars (\$5.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors hereby confirm that they have sold, assigned, transferred and set over to Assignee and, for greater certainty, do hereby sell, assign, transfer and set over to Assignee, and to Assignee's successors, assigns, nominees or other legal representatives, their entire right, title, interest, property and benefit in and for United States, Canada and all other countries and jurisdictions in and to the Invention, together with their entire right, title, interest, property and benefit in and to the Application, and any previously- or subsequently-filed applications corresponding or otherwise relating thereto in any country or jurisdiction, including any and all corresponding applications whether in the form of divisions, continuations, re-examinations, re-issues, extensions and other non-provisional applications, and national phases thereof, any and all

Letters Patent and Registrations that may issue, be granted or result therefrom for the Invention, and any and all rights of priority resulting from the filing of the above-identified application, the said corresponding applications and any previously- or subsequently-filed applications in respect of the Invention under international conventions, treaties or otherwise, the same to be held and enjoyed as fully and exclusively as the same would have been held and enjoyed by Assignors had this sale, assignment, transfer and setting over not been made;

AND ASSIGNORS, on behalf of themselves and their heirs, executors and administrators, do hereby covenant and agree to do all such lawful acts and things and to execute and deliver without further consideration such further lawful assignments, instruments, assurances, applications and other documents as may reasonably be required by said Assignee, or by its successors, assigns, nominees, or other legal representatives, to obtain each said Letters Patent and Registrations of the United States and all other countries and jurisdictions for the Invention and vest or secure the same in Assignee, and in Assignee's successors, assigns, nominees or other legal representatives;

AND ASSIGNORS do hereby authorize any official whose duty it is to grant patents or registrations, to grant each said Letters Patent and Registration for the Invention to the Assignee, and to Assignee's successors, assigns, nominees or other legal representatives;

AND ASSIGNORS, on behalf of themselves and their heirs, executors and administrators, do hereby authorize said Assignee, its successors, assigns, nominees or other legal representatives, including its Patent Agents, Norton Rose Fulbright Canada LLP, to amend the present assignment document to insert or correct the filing date, serial number or other identifying information of the Application as may be needed to record same.

ASSIGNORS UNDERSTAND AND AGREE that the attorneys and agents of the law firm of Norton Rose Fulbright Canada LLP do not personally represent Assignors or Assignors' legal interests, but instead represent the interests of Assignee. Since Norton Rose Fulbright Canada LLP cannot provide legal advice to Assignors with respect to this Assignment, Assignors acknowledge their right to seek their own independent legal counsel.

THIS ASSIGNMENT may be executed in counterparts, all of which shall be considered one and the same agreement. This Assignment shall be effective to transfer an Assignors' entire right, title, interest, property, and benefit to Assignee upon execution of this Assignment by such Assignors, regardless of whether any other Assignor executes this Agreement.

IN WITNESS WHEREOF, Assignors have hereunto signed their names on the day and year set forth below.

DATED this 27 day of April, 2020.

Ruizhi Deng

Ruizhi Deng

STATEMENT OF WITNESS

I, Jiawei He, state that I was personally present and did see
(name of witness)

Ruizhi Deng, who is personally known to me to be the person
(name of inventor)

named in the above assignment, duly execute the same on the day and year set forth above.

Jiawei He

(signature of witness)

DATED this 29 day of April 2020

Yanshuai Cao



STATEMENT OF WITNESS

I, Yiping Gu _____ state that I was personally present and did see
(name of witness)

Yanshuai Cao _____ who is personally known to me to be the person
(name of inventor)

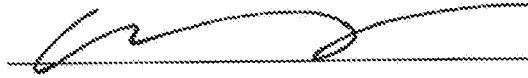
named in the above assignment, duly execute the same on the day and year set forth above.



(signature of witness)

DATED this 31st day of March, 2019.

Bo Chang

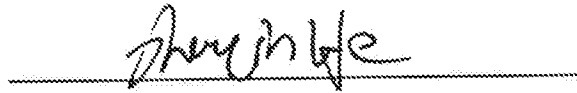


STATEMENT OF WITNESS

I, zhoujin He, state that I was personally present and did see
(name of witness)

Bo Chang, who is personally known to me to be the person
(name of inventor)

named in the above assignment, duly execute the same on the day and year set forth above.



(signature of witness)

DATED this 7th day of April, 2020.

Marcus Brubaker



STATEMENT OF WITNESS

I, Liv Capozzi, state that I was personally present and did see
(name of witness)

Marcus Brubaker, who is personally known to me to be the person
(name of inventor)

named in the above assignment, duly execute the same on the day and year set forth above.



(signature of witness)

DATED this _____ day of _____, 2019.

ROYAL BANK OF CANADA

[Signatory name]

[Title]

STATEMENT OF WITNESS

I, _____, state that I was personally present and did see
(name of witness)

_____, who is personally known to me to be the person
(name of signatory)

named in the above assignment, duly execute the same on the day and year set forth above.

(signature of witness)