

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5706130

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SUBMISSION IS TO CORRECT ERRORS IN INVENTORS DARVISH ROUHANI AND LO NAMES IN A COVER SHEET PREVIOUSLY RECORDED ON REEL 047893, FRAME 0484. THE DOCUMENT TO BE RECORDED IS NOT A DOCUMENT AFFECTING TITLE.
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
BITA DARVISH ROUHANI	12/13/2018
TAESIK NA	12/14/2018
ERIC S. CHUNG	12/14/2018
DANIEL LO	12/13/2018
DOUGLAS C. BURGER	12/17/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	MICROSOFT TECHNOLOGY LICENSING, LLC
<b>Street Address:</b>	ONE MICROSOFT WAY
<b>City:</b>	REDMOND
<b>State/Country:</b>	WASHINGTON
<b>Postal Code:</b>	98052
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16223603
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(503)595-5301
<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>	
<b>Phone:</b>	5035955300
<b>Email:</b>	valerie.sullivan@klarquist.com
<b>Correspondent Name:</b>	MARK WILSON / KLARQUIST SPARKMAN, LLP
<b>Address Line 1:</b>	121 SW SALMON ST., SUITE 1600
<b>Address Line 2:</b>	ONE WORLD TRADE CENTER
<b>Address Line 4:</b>	PORTLAND, OREGON 97204
<b>ATTORNEY DOCKET NUMBER:</b>	3382-101558-01
<b>NAME OF SUBMITTER:</b>	MARK W. WILSON
<b>SIGNATURE:</b>	/ Mark W. Wilson /
<b>DATE SIGNED:</b>	09/06/2019

PATENT

**Total Attachments: 11**

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## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5307748

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
BITA DARVISH ROUHANI	12/13/2018
TAESIK NA	12/14/2018
ERIC S. CHUNG	12/14/2018
DANEIL LO	12/13/2018
DOUGLAS C. BURGER	12/17/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	MICROSOFT TECHNOLOGY LICENSING, LLC
<b>Street Address:</b>	ONE MICROSOFT WAY
<b>City:</b>	REDMOND
<b>State/Country:</b>	WASHINGTON
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<b>PROPERTY NUMBERS Total: 1</b>	
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<b>Application Number:</b>	16223603
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<b>Phone:</b>	503-595-5300
<b>Email:</b>	CAMILLE.SAKAMOTO@KLARQUIST.COM
<b>Correspondent Name:</b>	KARL G. MEIER
<b>Address Line 1:</b>	121 SW SALMON STREET, SUITE 1600
<b>Address Line 2:</b>	ONE WORLD TRADE CENTER
<b>Address Line 4:</b>	PORTLAND, OREGON 97204
<b>ATTORNEY DOCKET NUMBER:</b>	3382-101558-01
<b>NAME OF SUBMITTER:</b>	KARL G. MEIER
<b>SIGNATURE:</b>	/Karl G. Meier/
<b>DATE SIGNED:</b>	01/03/2019
<b>Total Attachments: 10</b>	

## PATENT ASSIGNMENT

I, Bitu Darvish Rouhani ("ASSIGNOR"), am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "TRAINING NEURAL NETWORK ACCELERATORS USING MIXED PRECISION DATA FORMATS" ("APPLICATION"), which:

☒ will be filed. ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S legal representatives, of Microsoft Technology Licensing, LLC, One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S LEGAL REPRESENTATIVES) to insert here in parentheses (filed on \_\_\_\_\_, and given Application No. \_\_\_\_\_ by the following Office: United States Patent and Trademark Office) this APPLICATION's Application No. filing date, and Office, when known;

☐ was filed on \_\_\_\_\_ and was given Application No. \_\_\_\_\_ by the following Office "United States Patent and Trademark Office";

Microsoft Technology Licensing, LLC, a Washington limited liability company, on behalf of itself and its successors and assigns ("ASSIGNEE"), is entitled to, and is desirous of acquiring, the entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));


ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S LEGAL REPRESENTATIVES to insert the Application No., filing date, and Office into the following table for any APPLICATION DERIVATIVES after they are known;

Application No.	Filing Date	Office

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to

the ASSIGNEE, ASSIGNOR'S entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries (APPLICATION DERIVATIVES));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

 _____ Inventor's Signature	_____ 12/13/2018 Date
_____ Bitā Darvish Rouhani Printed Name in English	_____ بیټا درویش روحانی Printed Name in Native Language (if other than English)

## PATENT ASSIGNMENT

I, Taesik Na ("ASSIGNOR"), am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "TRAINING NEURAL NETWORK ACCELERATORS USING MIXED PRECISION DATA FORMATS" ("APPLICATION"), which:

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<u>Tassik Na</u>	<u>12/14/2018</u>
Inventor's Signature	Date
<u>Taesik Na</u>	<u></u>
Printed Name in English	Printed Name in Native Language (if other than English)

## PATENT ASSIGNMENT

I, Eric S. Chung ("ASSIGNOR"), am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "TRAINING NEURAL NETWORK ACCELERATORS USING MIXED PRECISION DATA FORMATS" ("APPLICATION"), which:

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ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S LEGAL REPRESENTATIVES to insert the Application No., filing date, and Office into the following table for any APPLICATION DERIVATIVES after they are known;

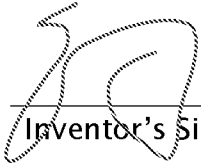
Application No.	Filing Date	Office

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 _____ Inventor's Signature	<u>12/11/18</u> _____ Date
<u>Eric S. Chung</u> _____ Printed Name in English	_____ Printed Name in Native Language (if other than English)

## PATENT ASSIGNMENT

I, Daniel Lo ("ASSIGNOR"), am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "TRAINING NEURAL NETWORK ACCELERATORS USING MIXED PRECISION DATA FORMATS" ("APPLICATION"), which:

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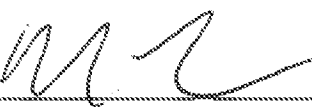
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	12/13/18
Inventor's Signature	Date
Daniel Lo	
Printed Name in English	Printed Name in Native Language (if other than English)

## PATENT ASSIGNMENT

I, Douglas C. Burger ("ASSIGNOR"), am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "TRAINING NEURAL NETWORK ACCELERATORS USING MIXED PRECISION DATA FORMATS" ("APPLICATION"), which:

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	<u>12/17/18</u>
Inventor's Signature	Date
Douglas C. Burger	
Printed Name in English	Printed Name in Native Language (if other than English)