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PATENT ASSIGNMENT COVER SHEET

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NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
TIANYI CHEN	03/15/2019
YIXIN SHI	03/13/2019
SHENG YI	03/15/2019

RECEIVING PARTY DATA

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City:	REDMOND
State/Country:	WASHINGTON
Postal Code:	98052

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16355702

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ATTORNEY DOCKET NUMBER:	405889-US-NP
NAME OF SUBMITTER:	HOLLI L. TEMPLETON
SIGNATURE:	/Holli L. Templeton/
DATE SIGNED:	03/15/2019

Total Attachments: 6

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> **PATENT** REEL: 048617 FRAME: 0404 505378532

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> PATENT REEL: 048617 FRAME: 0405

MS Docket No.: 405889-US-NP

I <u>Tianyi CHEN</u> ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "<u>SPATIALLY SPARSE CONVOLUTIONAL NEURAL NETWORKS FOR INKING APPLICATIONS</u>" ("APPLICATION"), which:

LLC., One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S LEGAL REPRESENTATIVES), to insert here in parentheses (filed on March 15, 2019 and given Application No. 16/355,702 by the following Office "US - United States Patent and Trademark Office"; this APPLICATION's Application No., filing date, and Office,	Ø	will be filed. ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S legal representative, Microsoft Technology Licensing,
the following Office "US - United States Patent and Trademark		LLC., One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S
		the following Office "US - United States Patent and Trademark
	kana	was filed onand was given Application No hy the following Office "US - United
Noby the following Office " <u>US - United</u>		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	

Page 1 of 2

MS Docket No.: 405889-US-NP

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).

Zuzt Chen	03115 1797
Inventor's Signature	Date
Tianyi CHEN	在天里
Printed Name in English	Printed Name in Native Language
	(if other than English)

I <u>Yixin SHI</u> ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "<u>SPATIALLY SPARSE CONVOLUTIONAL NEURAL NETWORKS FOR INKING APPLICATIONS</u>" ("APPLICATION"), which:

MS Docket No.: 405889-US-NP

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	ASSIGNEE'S legal representative, Microsoft Technology Licensing, LLC., One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S
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Yixin SHI

Printed Name in Native Language

(if other than English)

Printed Name in English

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I <u>Sheng YI</u> ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "<u>SPATIALLY SPARSE CONVOLUTIONAL NEURAL NETWORKS FOR INKING APPLICATIONS</u>" ("APPLICATION"), which:

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She Ti	03/15/17.
Inventor's Signature	Date
Sheng YI	分 .
Printed Name in English	Printed Name in Native Language (if other than English)