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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Anna Darling Goldie	04/23/2021
Azalia Mirhoseini	04/23/2021
Ebrahim Songhori	04/23/2021
Wenjie Jiang	04/23/2021
Shen Wang	04/23/2021
Roger David Carpenter	04/23/2021
Young-Joon Lee	04/23/2021
Mustafa Nazim Yazgan	05/21/2021
Chian-min Richard Ho	04/23/2021
Quoc V. Le	04/23/2021
James Laudon	04/23/2021
Jeffrey Adgate Dean	04/23/2021
Kavya Srinivasa Setty	04/23/2021
Omkar Pathak	04/23/2021

RECEIVING PARTY DATA

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City:	MOUNTAIN VIEW
State/Country:	CALIFORNIA
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PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	17238128
PCT Number:	US2021028713

CORRESPONDENCE DATA

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NAME OF SUBMITTER: FALLON ODANIEL

SIGNATURE: /Fallon O'Daniel/

DATE SIGNED: 05/21/2021

Total Attachments: 4

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ASSIGNMENT and CONFIRMATION

We, Anna Darling Goldie, Azalia Mirhoseini, Ebrahim Songhori, Wenjie Jiang, Shen Wang, Roger David Carpenter, Young-Joon Lee, Mustafa Nazim Yazgan, Chian-min Richard Ho, Quoc V. Le, James Laudon, Jeffrey Adgate Dean, Kavya Srinivasa Setty and Omkar Pathak, each hereby confirm the assignment and transfer to Google LLC, a Delaware limited liability company having a place of business at 1600 Amphitheatre Parkway, Mountain View, California 94043, and its successors and assigns (collectively, "ASSIGNEE") of all of our individual and joint right, title and interest throughout the world in and to any and all inventions and improvements that are the subject or subjects of a patent application entitled

GENERATING INTEGRATED CIRCUIT PLACEMENTS USING NEURAL NETWORKS

that names us as inventors, and was filed in the <u>United States Patent and Trademark Office (USPTO)</u> on April 22, 2021 as Application No. <u>17/238,128</u>, and the in the <u>PCT Receiving Office of the United States Patent and Trademark Office (USPTO)</u> on April 22, 2021 as Application No. <u>PCT/US2021/028713</u>, and which claims priority to U.S. Application Serial No. <u>63/014,021</u>, filed on April 22, 2020, which was previously assigned to Assignee. We authorize and request the attorneys filing the application to complete this assignment by inserting the filing date and serial number of the application when known. The foregoing assignment and transfer occurred by operation of one or more agreements relating to our employment by Google LLC or an affiliate of Google LLC. Should any of us have any remaining interest, we each hereby assign and transfer any right, title or interest we may have in the above-mentioned inventions and improvements anywhere in the world to ASSIGNEE.

This assignment and confirmation includes the foregoing patent application or patent; all legal equivalents thereof in any country and all patents issuing therefrom; all patents, utility models, and design registrations granted for any of said inventions and improvements throughout the world; and the right to claim priority based on the filing date of the foregoing patent application or patent under the International Convention for

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the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes. We authorize ASSIGNEE to apply in all countries in our names or in the name of ASSIGNEE for patents, utility models, and design registrations and like rights of exclusion and for inventors' certificates for the assigned inventions and improvements.

The foregoing assignments have been made for good and valuable consideration, the receipt of which is hereby acknowledged, and in accordance with the employment-related agreements existing at the time the above-mentioned inventions and improvements were made.

We hereby represent and covenant that no assignment, agreement or encumbrance has been or will be made or entered into by us that would conflict with the abovementioned assignment of the inventions and improvements to ASSIGNEE.

We further covenant for ourselves and our respective heirs, legal representatives and assigns to provide to ASSIGNEE promptly upon the request of ASSIGNEE all pertinent facts and documents relating to any of the above-mentioned inventions and improvements, patent applications, patents and legal equivalents, as may be known and accessible to us; to testify as to the same in any interference, litigation, or proceeding relating thereto; and promptly to execute and deliver to ASSIGNEE or its legal representative any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue or enforce any of the above-mentioned applications, inventions and improvements, patents and equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

Dated:	E3887D650010746E Anna Darling Goldie
Dated: 4/23/2021	Docusigned by: Appendix Appen

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Dated:	Docusigned by: E Sanghori E348856E5AF34A1
	Ebrahim Songhori
Dated:	Wenjie Jiang
Dated:	DocuSigned by:
Dated: <u>4/23/2021</u>	Roger David Carpenter
Dated: 4/23/2021	Pocusigned by: 190B54E400229400 Young-Joon Lee
Dated:	Mustafa Nazim Yazgan Mustafa Nazim Yazgan Mustafa Nazim Yazgan
Dated:	Chian-min Richard Ho
Dated: 4/23/2021	DocuSigned by: LLL 7D78D7C07556483 QUOC V. Le

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RECORDED: 05/21/2021