

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DEBARGHA MUKHERJEE	12/21/2016
YAOWU XU	12/20/2016
JAMES BANKOWSKI	12/19/2016
PAUL WILKINS	12/21/2016
JINGNING HAN	12/20/2016
YUXIN LIU	12/19/2016
WEI-TING LIN	12/19/2016
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<b>Postal Code:</b>	94043
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15387690
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<b>Fax Number:</b>	
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<b>ATTORNEY DOCKET NUMBER:</b>	GOGL-1186-A
<b>NAME OF SUBMITTER:</b>	ANDREW R. BASILE, JR.
<b>SIGNATURE:</b>	/Andrew R. Basile, Jr./
<b>DATE SIGNED:</b>	01/06/2017

**Total Attachments: 2**

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Attorney Docket No.: GOGL-1186-A

ASSIGNMENT AND AGREEMENT

WHEREAS, We, Debargha Mukherjee, of Cupertino, California; Yaowu Xu, of Saratoga, California; James Bankoski, of Los Gatos, California; Paul Wilkins, of Cambridge, United Kingdom; Jingning Han, of Santa Clara, California; Yuxin Liu, of Palo Alto, California; and Wei-Ting Lin, of Goleta, California (hereinafter referred to as "ASSIGNOR"), have invented a certain invention entitled **MULTI-LAYER-MULTI-REFERENCE PREDICTION USING ADAPTIVE TEMPORAL FILTERING** as set forth in this United States Patent Application,

☒ executed concurrently herewith  
☐ executed on \_\_\_\_\_  
☐ Serial No. \_\_\_\_\_ filed \_\_\_\_\_

WHEREAS, GOOGLE INC., a Corporation of California having its principal place of business at 1600 Amphitheatre Parkway, Mountain View, California 94043 (hereinafter referred to as "ASSIGNEE"), desires to acquire the entire right, title, and interest in and to said invention;

NOW THEREFORE, in consideration of One Dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNOR has sold, assigned, and transferred, and by these presents hereby sells, assigns, and transfers, unto ASSIGNEE, its successors and assigns, the full and exclusive right, title, and interest in and to (a) the above-identified invention or inventions and all improvements and modifications thereof, (b) the above-identified application and all other applications for Letters Patent of the United States and countries foreign thereto for the above-identified invention or inventions and all improvements and modifications thereof, (c) all Letters Patent which may issue from said applications in the United States and countries foreign thereto, (d) all divisions, continuations, reissues, and extensions of said applications and Letters Patent, and (e) the right to claim for any of said applications the full benefits and priority rights under the International Convention and any other international agreement to which the United States adheres; such right, title, and interest to be held and enjoyed by ASSIGNEE, its successors and assigns, to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by ASSIGNOR had this Assignment not been made.

ASSIGNOR HEREBY AUTHORIZES AND REQUESTS the Commissioner of Patents and Trademarks to issue said Letters Patent to ASSIGNEE as assignee of the entire interest, for the sole use and benefit of ASSIGNEE, its successors and assigns.

ASSIGNOR HEREBY AGREES (a) to communicate to ASSIGNEE, its successors and assigns, or their representatives or agents, all facts and information known or available to ASSIGNOR respecting said invention or inventions, improvements, and modifications including evidence for interference, reexamination, reissue, opposition, revocation, extension, or infringement purposes or other legal, judicial, or administrative proceedings, whenever requested by ASSIGNEE; (b) to testify in person or by affidavit as required by ASSIGNEE, its successors and assigns, in any such proceeding in the United States or a country foreign thereto; (c) to execute and deliver, upon request by ASSIGNEE, all lawful papers including, but not limited to, original, divisional, continuation, and reissue applications, renewals, assignments, powers of attorney, oaths, affidavits, declarations, depositions; and (d) to provide all reasonable assistance to ASSIGNEE, its successors and assigns, in obtaining and enforcing proper title in and protection

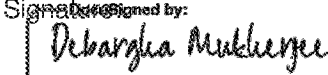

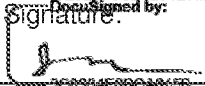


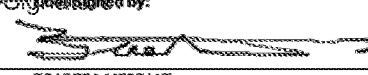
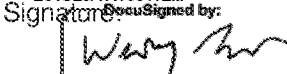
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for said invention or inventions, improvements, and modifications under the intellectual property laws of the United States and countries foreign thereto.

ASSIGNOR HEREBY REPRESENTS AND WARRANTS that ASSIGNOR has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that ASSIGNOR has not executed and will not execute any document or instrument in conflict herewith.

ASSIGNOR HEREBY GRANTS to the law firm of Young Basile Hanlon & MacFarlane, P.C. the power and authority to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

ASSIGNOR UNDERSTANDS AND AGREES that the attorneys and agents of the law firm of Young Basile Hanlon & MacFarlane, P.C. do not personally represent ASSIGNOR or ASSIGNOR's legal interests, but instead represent the interests of ASSIGNEE; since said attorneys and agents cannot provide legal advice to ASSIGNOR with respect to this Assignment, ASSIGNOR acknowledges its right to seek its own independent legal counsel.

NAME(S) AND SIGNATURE OF ASSIGNOR		
Name: Debargha Mukherjee	Signature:  DocuSigned by: Debargha Mukherjee	Date: 12/21/2016
Name: Yaowu Xu	Signature:  DocuSigned by: ED0FD300BAE04EF...	Date: 12/20/2016
Name: James Bankoski	Signature:  DocuSigned by: BE9E0F5C03234E7...	Date: 12/19/2016
Name: Paul Wilkins	Signature:  DocuSigned by: 3C0954E09CA945B...	Date: 12/21/2016
Name: Jingning Han	Signature:  DocuSigned by: D57D0998E03D48B...	Date: 12/20/2016
Name: Yuxin Liu	Signature:  DocuSigned by: 97BDA3B1A30C4FE...	Date: 12/19/2016
Name: Wei-Ting Lin	Signature:  DocuSigned by: E64CE3A4179541E...	Date: 12/19/2016