

## 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>
JUNGHYUN KWON	11/10/2016
DINGHUANG JI	11/14/2016
MAX MCFARLAND	11/10/2016
SILVIO SAVARESE	11/14/2016
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<b>Name:</b>	RICOH COMPANY, LTD.
<b>Street Address:</b>	3-6 NAKAMAGOME
<b>Internal Address:</b>	1- CHOME, OHTA-KU
<b>City:</b>	TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	143-8555
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	15351340
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<b>ATTORNEY DOCKET NUMBER:</b>	10010-05748 US
<b>NAME OF SUBMITTER:</b>	PAIGE M. ALSBURY
<b>SIGNATURE:</b>	/Paige Alsbury/
<b>DATE SIGNED:</b>	11/15/2016
<b>Total Attachments: 2</b>	

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**ASSIGNMENT**

For good and valuable consideration, the receipt of which is hereby acknowledged, the person(s) named below (referred to as "INVENTOR" whether singular or plural) has sold, assigned, and transferred and does hereby sell, assign, and transfer to **Ricoh Company, Ltd.**, a corporation of **Japan** having a place of business at **3-6 Nakamagome, 1-Chome, Ohta-ku, Tokyo, Japan 143-8555** ("ASSIGNEE"), for itself and its successors, transferees, and assignees, the following:

1. The entire worldwide right, title, and interest in all inventions and improvements ("SUBJECT MATTER") that are disclosed in the following provisional application filed under 35 U.S.C. § 111(b), non-provisional application filed under 35 U.S.C. § 111(a), international application filed according to the Patent Cooperation Treaty (PCT), or U.S. national phase application filed under 35 U.S.C. § 371 ("APPLICATION"):

Application No. 15/351,340, entitled "Novel View Synthesis Using Deep Convolutional Neural Networks," filed on November 14, 2016.

2. The entire worldwide right, title, and interest in and to:  
(a) the APPLICATION; (b) all applications claiming priority from the APPLICATION; (c) all provisional, utility, divisional, continuation, substitute, renewal, reissue, and other applications related thereto which have been or may be filed in the United States or elsewhere in the world; (d) all patents (including reissues and re-examinations) which may be granted on the applications set forth in (a), (b), and (c) above; and (e) all right of priority in the APPLICATION and in any underlying provisional or foreign application, together with all rights to recover damages for infringement of provisional rights.

INVENTOR agrees that ASSIGNEE may apply for and receive patents for SUBJECT MATTER in ASSIGNEE's own name.

INVENTOR agrees to do the following, when requested, and without further consideration, in order to carry out the intent of this Assignment: (1) execute all oaths, assignments, powers of attorney, applications, and other papers necessary or desirable to fully secure to ASSIGNEE the rights, titles and interests herein conveyed; (2) communicate to ASSIGNEE all known facts relating to the SUBJECT MATTER; and (3) generally do all lawful acts that ASSIGNEE shall consider desirable for securing, maintaining, and enforcing worldwide patent protection relating to the SUBJECT MATTER and for vesting in ASSIGNEE the rights, titles, and interests herein conveyed. INVENTOR further agrees to provide any successor, assign, or legal representative of ASSIGNEE with the benefits and assistance provided to ASSIGNEE hereunder.

INVENTOR represents that INVENTOR has the rights, titles, and interests to convey as set forth herein, and covenants with ASSIGNEE that the INVENTOR has not made and will not

Title: **NOVEL VIEW SYNTHESIS USING DEEP CONVOLUTIONAL NEURAL NETWORKS**  
Filed: November 14, 2016  
Application No.: 15/351,340

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hereafter make any assignment, grant, mortgage, license, or other agreement affecting the rights, titles, and interests herein conveyed.

INVENTOR grants the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

DocuSigned by:  
X Junghyun Kwon 11/10/2016  
F1F0725EA73A4B6...  
**Junghyun Kwon** Date of Signature

DocuSigned by:  
X Dinghuang Ji 11/14/2016  
C9D86710A2E94CA...  
**Dinghuang Ji** Date of Signature

DocuSigned by:  
X Max McFarland 11/10/2016  
1A9FB017A54F4A1...  
**Max McFarland** Date of Signature

DocuSigned by:  
X Silvio Savarese 11/14/2016  
C9961F0E9E044EF...  
**Silvio Savarese** Date of Signature