PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Karl S. Ni	11/16/2012
Katherine L. Bouman	11/26/2012
Nadya T. Bliss	12/14/2012

RECEIVING PARTY DATA

Name:	Massachusetts Institute of Technology	
Street Address:	77 Massachusetts Avenue	
City:	Cambridge	
State/Country:	MASSACHUSETTS	
Postal Code:	02139	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13716940

CORRESPONDENCE DATA

Fax Number: 9782649119

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 978-264-4001

Email: cmorrissette@smmalaw.com

Correspondent Name: Anderson Gorecki & Rouille LLP

Address Line 1: 33 Nagog Park

Address Line 4: Acton, MASSACHUSETTS 01720

ATTORNEY DOCKET NUMBER:	MIT12-01_13271L
NAME OF SUBMITTER:	David W. Rouille

Total Attachments: 12

source=Assignments#page1.tif source=Assignments#page2.tif

PATENT REEL: 029482 FRAME: 0799 137169

CH \$40,00

502165503

source=Assignments#page3.tif		
source=Assignments#page4.tif		
source=Assignments#page5.tif		
source=Assignments#page6.tif		
source=Assignments#page7.tif		
source=Assignments#page8.tif		
source=Assignments#page9.tif		
source=Assignments#page10.tif		
source=Assignments#page11.tif		
source=Assignments#page12.tif		

ASSIGNMENT

WHEREAS, we, Karl S. Ni, Katherine L. Bouman, and Nadya T. Bliss, have invented a certain improvement in SPARSE CLASS REPRESENTATION WITH LINEAR PROGRAMMING described in an application for Letters Patent of the United States, the specification of which:

[X]	United States Patent Office;		
[]	was filed on	as U.S. Application No	
[]	was patented under U.S. Pate	ent Noon	

WHEREAS, Massachusetts Institute of Technology (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue,

divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

in 1E311MONT WHEREOF, we seals the date set forth below.	e nave nereumo set our nands and anixed our
Date: 11/16/2012	(Vail)
	Inventor's Signature
Print full name of inventor:	Karl S. Ni
Residence:	321 Diablo Court, Palo Alto, CA 94306
Citizenship:	United States
Mailing Address:	Same as above
COUNTY OF On this day of me the above-named	, 2012, then personally appeared before
driver's license; [] (other) whose name is subscribed to the fore	known to me ification [] employee identification card; [] to be the person going Assignment and acknowledged that he/she and deed for the purposes therein contained.
	Notary Public
	Print Name:
	My Commission expires / /

Date:	
	Inventor's Signature
Print full name of inventor:	Katherine L. Bouman
Residence:	40 Clay Court, W. Lafayette, IN 47906
Citizenship:	UNITED STATES
Mailing Address:	Same as above
STATE/COMMONWEALTH OF	
me the above-named through satisfactory evidence of ident driver's license; [] (other) whose name is subscribed to the force	, 2012, then personally appeared before known to me httfication [] employee identification card; [] to be the person egoing Assignment and acknowledged that he/she ct and deed for the purposes therein contained.
	Notary Public
	Print Name:
	My Commission expires//

Date:	
	Inventor's Signature
Print full name of inventor:	Nadya T. Bliss
Residence:	345 Harvard St #4D, Cambridge, MA 02138
Citizenship:	United States
Mailing Address:	Same as above
STATE/COMMONWEALTH OF	
COUNTY OF	
me the above-named	, 2012, then personally appeared before known to me
	ification [] employee identification card; [] to be the person going Assignment and acknowledged that he/she
executed the same as his/her free act	t and deed for the purposes therein contained.
	Notary Public
	Print Name:
	My Commission expires//

<u>ASSIGNMENT</u>

WHEREAS, we, Karl S. Ni, Katherine L. Bouman, and Nadya T. Bliss, have invented a certain improvement in SPARSE CLASS REPRESENTATION WITH LINEAR PROGRAMMING described in an application for Letters Patent of the United States, the specification of which:

[X]	United States Patent Office;	nerewith and is about to be filed in the
[]	was filed on	as U.S. Application No
[]	was patented under U.S. Patent	Noon

WHEREAS, Massachusetts Institute of Technology (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue,

divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Date:		
		Inventor's Signature
Print full na	ime of inventor:	Karl S. Ni
Residence		321 Diablo Court, Palo Alto, CA 94306
Citizenship	:	United States
Mailing Add	dress:	Same as above
STATE/CC	MMONWEALTH OF COUNTY OF	
me the about through said driver's lice whose name	ove-namedtisfactory evidence of icense; [] (other) ne is subscribed to the	, 2012, then personally appeared before known to me dentification [] employee identification card; [] to be the person foregoing Assignment and acknowledged that he/she act and deed for the purposes therein contained.
		Notary Public
		Print Name:
		My Commission expires//

Date: 11/26/12	Karnei mat Bouman	
	Inventor's Signature	
Print full name of inventor:	Katherine L. Bouman	
Residence:	40 Clay Court, W. Lafayette, IN 47906	
Citizenship:	UNITED STATES	
Mailing Address:	Same as above	
STATE/COMMONWEALTH OF		
COUNTY OF		
On this day of me the above-named	, 2012, then personally appeared before	
through satisfactory evidence of idendriver's license: [] (other)	known to me tification [] employee identification card; [] to be the person	
whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.		
	Notary Public	
·	Print Name:	
	My Commission expires / /	

Date:		
	Inventor's Signature	
Print full name of inventor:	Nadya T. Bliss	
Residence:	4741 N. Scottsdale Rd. #2000 Scottsdale, AZ 85251	
Citizenship:	United States	
Mailing Address:	Same as above	
On this day of, 2012, then personally appeared before me the above-named known to me through satisfactory evidence of identification [_] employee identification card; [_] driver's license; [_] (other) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.		
	Notary Public Print Name:	
	My Commission expires//	

<u>ASSIGNMENT</u>

WHEREAS, we, Karl S. Ni, Katherine L. Bouman, and Nadya T. Bliss, have invented a certain improvement in SPARSE CLASS REPRESENTATION WITH LINEAR PROGRAMMING described in an application for Letters Patent of the United States, the specification of which:

[X]	United States Patent Office;	nerewith and is about to be filed in the
[]	was filed on	as U.S. Application No
[]	was patented under U.S. Patent	Noon

WHEREAS, Massachusetts Institute of Technology (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue,

divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Date:		
	Inventor's Signature	
Print full name of inventor:	Karl S. Ni	
Residence:	321 Diablo Court, Palo Alto, CA 94306	
Citizenship:	United States	
Mailing Address:	Same as above	
STATE/COMMONWEALTH OF		
On this day of, 2012, then personally appeared before me the above-named known to me through satisfactory evidence of identification [_] employee identification card; [_] driver's license; [_] (other) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.		
	Notary Public	
	Print Name:	
	My Commission expires//	

Date:		
		Inventor's Signature
Print full name	of inventor:	Katherine L. Bouman
Residence:		40 Clay Court, W. Lafayette, IN 47906
Citizenship:		UNITED STATES
Mailing Addres	ss:	Same as above
STATE/COMM	MONWEALTH OF _ COUNTY OF _	
me the above- through satisfa	-named actory evidence of id	, 2012, then personally appeared before known to me entification [] employee identification card; [] to be the person
whose name i	e; [] (other) s subscribed to the f same as his/her free	oregoing Assignment and acknowledged that he/she act and deed for the purposes therein contained.
		Notary Public
		Print Name:
		Mv Commission expires//

Date: 14 DECEMBER 2012	Malle	
	Inventor's Signature	
Print full name of inventor:	Nadya T. Bliss	
Residence:	4741 N. Scottsdale Rd. #2000 Scottsdale, AZ 85251	
Citizenship:	United States	
Mailing Address:	Same as above	
STATE/COMMONWEALTH OF COUNTY OF On this day of, 2012, then personally appeared before me the above-named known to me through satisfactory evidence of identification [_] employee identification card, [_] driver's license; [_] (other) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.		
	Notary Public	
	Print Name:	
	My Commission expires / /	

RECORDED: 12/17/2012