03/10/2021 506546996

### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6593775

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
MOHAMMADHASSAN NAJAFI	02/18/2021
DAVID J. LILJA	02/19/2021
MARCUS RIEDEL	02/18/2021
KIARASH BAZARGAN	02/26/2021
SAYED ABDOLRASOUL FARAJI	02/22/2021
BINGZHE LI	02/18/2021

### **RECEIVING PARTY DATA**

Name:	REGENTS OF THE UNIVERSITY OF MINNESOTA
Street Address:	200 OAK STREET SE
Internal Address:	SUITE 600 MCNAMARA ALUMNI CENTER
City:	MINNEAPOLIS
State/Country:	MINNESOTA
Postal Code:	55455

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16906122

### **CORRESPONDENCE DATA**

Fax Number: (651)735-1102

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 6517351100

Email: pairdocketing@ssiplaw.com SHUMAKER & SIEFFERT, P.A. **Correspondent Name:** 

1625 RADIO DRIVE Address Line 1:

Address Line 2: SUITE 300

Address Line 4: WOODBURY, MINNESOTA 55125

ATTORNEY DOCKET NUMBER:	1008-282US01/2019-369
NAME OF SUBMITTER:	ALIYA R. KHAZON
SIGNATURE:	/Aliya R. Khazon/
DATE SIGNED:	03/10/2021

PAIENI REEL: 055550 FRAME: 0687

506546996

otal Attachments: 18
ource=Assignment#page1.tif
ource=Assignment#page2.tif
ource=Assignment#page3.tif
ource=Assignment#page4.tif
ource=Assignment#page5.tif
ource=Assignment#page6.tif
ource=Assignment#page7.tif
ource=Assignment#page8.tif
ource=Assignment#page9.tif
ource=Assignment#page10.tif
ource=Assignment#page11.tif
ource=Assignment#page12.tif
ource=Assignment#page13.tif
ource=Assignment#page14.tif
ource=Assignment#page15.tif
ource=Assignment#page16.tif
ource=Assignment#page17.tif
ource=Assignment#page18.tif

PATENT REEL: 055550 FRAME: 0688



## University of Minnesota assignment

WHEREAS, I, Mohammadhassan Najafi, have invented certain new and useful inventions in LOW-DISCREPANCY DETERMINISTIC BIT-STREAM PROCESSING USING SOBOL SEQUENCES, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Utility application no. 16/906,122 on June 19, 2020 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor;

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns 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 and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto (including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

I have hereunto set my hand on February 18, 2021 | 12:51 PM CST

Molammadlassan Najafi \_\_\_\_\_

Mohammadhassan Najafi

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

ATENT-

REGENTS OF THE UNIVERSITY OF MINNESOTA

DocuSigned by:

WW0FB633167311411

Carol Grutkoski Chief of Staff and Operations Manager per Presidential Delegation ID 257866

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT



# University of Minnesota <u>ASSIGNMENT</u>

WHEREAS, I, David J. Lilja, have invented certain new and useful inventions in LOW-DISCREPANCY DETERMINISTIC BIT-STREAM PROCESSING USING SOBOL SEQUENCES, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Utility application no. 16/906,122 on June 19, 2020 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor;

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns 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 and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto (including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

I have hereunto set my hand on February 19, 2021 | 9:44 AM PST

2

/ David J. Lilya \_\_\_\_\_

David J. Lilja

REGENTS OF THE UNIVERSITY OF MINNESOTA

DocuSigned by:

Carol Grutkoski

Chief of Staff and Operations Manager per Presidential Delegation ID\_257866

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT



## University of Minnesota ASSIGNMENT

WHEREAS, I, Marcus Riedel, have invented certain new and useful inventions in LOW-DISCREPANCY DETERMINISTIC BIT-STREAM PROCESSING USING SOBOL SEQUENCES, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Utility application no. 16/906,122 on June 19, 2020 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor;

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns 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 and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto (including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

2

February 18, 2021 | 4:41 PM CST

I have hereunto set my hand on

Beedel 1

Marcus Riedel

REGENTS OF THE UNIVERSITY OF MINNESOTA

DocuSigned by:

Carol Grutkoski

Chief of Staff and Operations Manager per Presidential Delegation ID\_257866

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT



## University of Minnesota assignment

WHEREAS, I, Kiarash Bazargan, have invented certain new and useful inventions in LOW-DISCREPANCY DETERMINISTIC BIT-STREAM PROCESSING USING SOBOL SEQUENCES, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Utility application no. 16/906,122 on June 19, 2020 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor;

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns 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 and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto (including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

2

Kiarash Bazargan

REGENTS OF THE UNIVERSITY OF MINNESOTA

DocuSigned by:

0FB835187311411.

Carol Grutkoski

Chief of Staff and Operations Manager per Presidential Delegation ID 257866

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT-



# University of Minnesota <u>ASSIGNMENT</u>

WHEREAS, I, Sayed Abdolrasoul Faraji, have invented certain new and useful inventions in LOW-DISCREPANCY DETERMINISTIC BIT-STREAM PROCESSING USING SOBOL SEQUENCES, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Utility application no. 16/906,122 on June 19, 2020 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor:

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns 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 and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto (including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

I have hereunto set my hand on February 22, 2021 | 8:08 AM CST

Docusigned by:

/ Sayed abdolrasoul Faraji
/ 74AD3C1347884A8...

Sayed Abdolrasoul Faraji

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT

REGENTS OF THE UNIVERSITY OF MINNESOTA

DocuSigned by:

0FB835187311411...

Carol Grutkoski Chief of Staff and Operations Manager per Presidential Delegation ID 257866

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT



## University of Minnesota assignment

WHEREAS, I, Bingzhe Li, have invented certain new and useful inventions in LOW-DISCREPANCY DETERMINISTIC BIT-STREAM PROCESSING USING SOBOL SEQUENCES, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Utility application no. 16/906,122 on June 19, 2020 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor;

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns 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 and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto (including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

PATENT

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

I have hereunto set my hand on \_\_\_\_\_\_February 18, 2021 | 12:32 PM CST

2

Dingylu Li
71F6E20BDB1E4A5...

Bingzhe Li

REGENTS OF THE UNIVERSITY OF MINNESOTA

DocuSigned by:

Carol Grutkoski

Chief of Staff and Operations Manager per Presidential Delegation ID 257866

Attorney Docket Number 1008-282US01 UM Case No. 2019-369

**RECORDED: 03/10/2021** 

PATENT

REEL: 055550 FRAME: 0706

3