507580797 11/03/2022

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT7627686

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------------|----------------|
| PAUL GILBERT MEYER | 06/29/2020 |
| THIAM KHEAN HAH | 06/30/2020 |
| RANDY RENFU HUANG | 06/29/2020 |
| RON DIAMANT | 06/28/2020 |
| VIGNESH VIVEKRAJA | 07/12/2022 |

RECEIVING PARTY DATA

| Name: | AMAZON TECHNOLOGIES, INC. | |
|-----------------|---------------------------|--|
| Street Address: | PO BOX 81226 | |
| City: | SEATTLE | |
| State/Country: | WASHINGTON | |
| Postal Code: | 98108-1226 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 18052527 |

CORRESPONDENCE DATA

Fax Number: (510)663-0920

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: (510)663-1100

Email: assignments@wavsip.com

Correspondent Name: WEAVER AUSTIN VILLENEUVE & SAMPSON LLP

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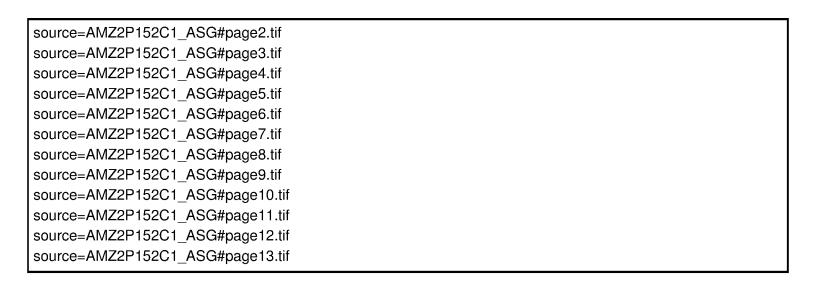
| ATTORNEY DOCKET NUMBER: | AMZ2P152C1/P70864-US02CON | |
|-------------------------|---------------------------|--|
| NAME OF SUBMITTER: | MELANIE HITCHCOCK | |
| SIGNATURE: | /Melanie Hitchcock/ | |
| DATE SIGNED: | 11/03/2022 | |

Total Attachments: 13

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PATENT REEL: 061651 FRAME: 0867

507580797



U.S. Patent Appln. No. <u>16/917,033</u> Filing Date <u>June 30, 2020</u>

Attorney Docket No. 097307-1194186 (139200US)

Client Docket No. P70864-US01

PARTIES TO THE ASSIGNMENT

Assignor(s):

Paul Gilbert Meyer 410 Terry Avenue North Seattle, WA 98109-5210

Thiam Khean Hah 410 Terry Avenue North Seattle, WA 98109-5210

Randy Renfu Huang 410 Terry Avenue North Seattle, WA 98109-5210

Ron Diamant 410 Terry Avenue North Seattle, WA 98109-5210

Vignesh Vivekraja 410 Terry Avenue North Seattle, WA 98109-5210

Assignee:

Amazon Technologies, Inc. PO Box 81226 Seattle, WA 98108-1226

<u>AGREEMENT</u>

WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled

"EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY" (Invention) for which a nonprovisional application for United States Letters Patent (Application):

| was filed on _______ and accorded U.S. Application No. _______; or
| will be filed concurrently with the submission of this executed PATENT ASSIGNMENT
| for recordation. ASSIGNOR(S) hereby authorizes and requests ASSIGNEE'S legal

Page 1 of 9

U.S. Patent Appln. No. 16/917,033

Attorney Docket No. 097307-1194186 (139200US)

Filing Date June 30, 2020

Client Docket No. P70864-US01

Title of Invention: EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY

Inventors: Paul Gilbert Meyer, Thiam Khean Hah, Randy Renfu Huang, Ron Diamant, Vignesh

Vivekraja

representatives, of Kilpatrick Townsend & Stockton LLP, associated with Customer

No. 107508, to insert in the header above and here in parentheses (U.S. Patent

Application No. 16/917,033 , filed June 30, 2020) this application's U.S. application

number and filing date, when known.

WHEREAS, ASSIGNEE, a corporation of the State of Nevada, is desirous of acquiring the

entire right, title and interest in and to the Invention and in and to any letters patent that may be

granted therefor in the United States and in any and all foreign countries.

NOW, THEREFORE, in exchange for good and valuable consideration, the receipt of which

is hereby acknowledged, ASSIGNOR(S) hereby sell, assign and transfer unto ASSIGNEE its

successors and assigns, the entire right, title and interest in and to said Invention and any

improvements thereto, said Application and any and all letters patent which may be granted for

said Invention in the United States of America and its territorial possessions and in any and all

foreign countries, and in any and all provisional, divisions, reissues, re-examinations and

continuations thereof, including the right to file foreign applications directly in the name of

ASSIGNEE and to claim priority rights deriving from said Application to which said foreign

applications are entitled by virtue of international convention, treaty or otherwise, said Invention,

Application and all letters patent on said Invention to be held and enjoyed by ASSIGNEE and its

successors and assigns for their use and benefit and of their successors and assigns as fully and

entirely as the same would have been held and enjoyed by ASSIGNOR(S) had this assignment,

transfer and sale not been made. ASSIGNOR(S) hereby authorize and request the Commissioner

of Patents and Trademarks, as well as all other applicable patent offices throughout the world, to

Page 2 of 9

U.S. Patent Appln. No. 16/917,033

Filing Date June 30, 2020

Attorney Docket No. 097307-1194186 (139200US) Client Docket No. P70864-US01

Title of Invention: EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY

Inventors: Paul Gilbert Meyer, Thiam Khean Hah, Randy Renfu Huang, Ron Diamant, Vignesh

Vivekraja

issue all letters patent on said Invention to ASSIGNEE. ASSIGNOR(S) agree to execute all

instruments and documents required for the making and prosecution of applications for United

States and foreign letters patent on said Invention, for litigation regarding said letters patent, or

for the purpose of protecting title to said Invention or letters patent therefor.

AND ASSIGNOR(S) DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its

successors, legal representatives, and assigns all claims for damages and all remedies arising out

of any violation of the rights assigned hereby that may have accrued prior to the date of

assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue

for, collect, and retain damages for past infringements of said letters patent before or after

issuance.

AND ASSIGNOR(S) DOES HEREBY covenant and agree that ASSIGNOR(S) will communicate

to ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR

respecting the Invention or said Application, and testify in any legal proceeding, assist in the

preparation of any other patent property relating to the Application and the Invention or any

improvements made thereto, sign/execute all lawful papers, provide all requested documents,

execute and make all rightful oaths and/or declarations in connection with the Application and

the Invention including any improvements made thereto, any patent applications filed therefrom,

and any continuing application filed from any of the aforementioned applications, and generally

do everything possible to aid ASSIGNEE, its successors, legal representatives and assigns, to obtain

and enforce proper patent protection for the Invention in all countries. These provisions are

binding upon ASSIGNOR's heirs, legal representatives, administrators, and assigns.

Page 3 of 9

U.S. Patent Appln. No. 16/917,033 Filing Date June 30, 2020

Attorney Docket No. 097307-1194186 (139200US) Client Docket No. P70864-US01

Title of Invention: EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY

Inventors: Paul Gilbert Meyer, Thiam Khean Hah, Randy Renfu Huang, Ron Diamant, Vignesh Vivekraja

Page 4 of 9

| U.S. Patent Appln. No. <u>16/917,033</u> Filing Date <u>June 30, 2020</u> Attorney Docket No. 097307-1194186 (139200US) Client Docket No. P70864-US01 |
|--|
| Title of Invention: EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY |
| Inventors: Paul Gilbert Meyer, Thiam Khean Hah, Randy Renfu Huang, Ron Diamant, Vignesh Vivekraja |
| <u>DECLARATION</u> As a below named inventor, I hereby declare that: |
| This declaration is directed to: |
| the attached application; or |
| United States Patent Application number filed on; or |
| PCT International Application number filed on |
| The above-identified application was made or authorized to be made by me. |
| I believe that I am the original inventor or an original joint inventor of a claimed Invention in the |
| application. |
| I have reviewed and understand the contents of the above-identified application, and acknowledge the duty to disclose to the US Patent & Trademark Office all information known to me to be material to the patentability as defined in 37 CFR 1.56. |
| I hereby acknowledge that any willful false statement made in this declaration is punishable |
| under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both. |
| Paul Gilbert Meyer June 29, 2020 Date |

| U.S. Patent Appln. No. 16/917,033 Filing Date June 30, 2020 | Attorney Docket | No. 097307-1194186 Client Docket No. F | |
|---|-----------------------|---|-------------|
| Title of Invention: EMULATING FINE-GRAINED | SPARSITY IN A SYS | STOLIC ARRAY | |
| Inventors: Paul Gilbert Meyer, Thiam Khean H Vivekraja | ah, Randy Renfu F | łuang, Ron Diamant, | Vignesh |
| DECLARATION As a below named inventor, I hereby declare the | at: | | |
| This declaration is directed to: | | | |
| igstyle the attached application; or | | | |
| United States Patent Application no | ımber | filed on | ; or |
| PCT International Application number | oer file | ed on | |
| The above-identified application was made or a | | | |
| I believe that I am the original inventor or an or | iginal joint invento | r of a claimed Inventi | on in the |
| application. | | | |
| I have reviewed and understand the contents of the duty to disclose to the US Patent & Tradem material to the patentability as defined in 37 CI | ark Office all inforr | | _ |
| I hereby acknowledge that any willful false stat | ement made in this | s declaration is punish | nable under |
| 18 USC 1001 by fine or imprisonment of not mo | ore than five (5) ye: | ars, or both. | |
| Thiam Khean Hahr June 30, 2020 Date | | | |
| Date | | | |

| U.S. Patent Appln. No. 16/917,033 Attorney Docket No. 097307-1194186 (139200U) Filing Date June 30, 2020 Client Docket No. P70864-USC | • |
|---|---|
| Title of Invention: EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY | |
| Inventors: Paul Gilbert Meyer, Thiam Khean Hah, Randy Renfu Huang, Ron Diamant, Vignesh Vivekraja | |
| DECLARATION As a below named inventor, I hereby declare that: | |
| This declaration is directed to: | |
| the attached application; or | |
| United States Patent Application number filed on; or | |
| PCT International Application number filed on | |
| | |
| The above-identified application was made or authorized to be made by me. | |
| | |
| I believe that I am the original inventor or an original joint inventor of a claimed Invention in the | |
| application. | |
| | |
| I have reviewed and understand the contents of the above-identified application, and acknowledg | e |
| the duty to disclose to the US Patent & Trademark Office all information known to me to be | |
| material to the patentability as defined in 37 CFR 1.56. | |
| | |
| I hereby acknowledge that any willful false statement made in this declaration is punishable under | , |
| 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both. | |
| | |
| اسسم DocuSigned by: | |
| /Randy Kenfu Huang/ | |
| Randy Rentu Huang | |
| June 29, 2020 | |
| Date | |
| | |

| U.S. Patent Appln. No. <u>16/917,033</u> Filing Date <u>June 30, 202</u> 0 | Attorney Docket No. 097307-1194186 (139200US) Client Docket No. P70864-US01 |
|--|--|
| Title of Invention: EMULATING FINE-GRAINED | SPARSITY IN A SYSTOLIC ARRAY |
| Inventors: Paul Gilbert Meyer, Thiam Khean Ha Vivekraja | h, Randy Renfu Huang, Ron Diamant, Vignesh |
| DECLARATION As a below named inventor, I hereby declare the | t: |
| This declaration is directed to: | |
| igstyle igstyle the attached application; or | |
| United States Patent Application nu | mber; or |
| PCT International Application numb | er filed on |
| The above-identified application was made or a | uthorized to be made by me. |
| I believe that I am the original inventor or an ori | ginal joint inventor of a claimed Invention in the |
| application. | |
| I have reviewed and understand the contents of the duty to disclose to the US Patent & Tradema material to the patentability as defined in 37 CF | |
| I hereby acknowledge that any willful false state | ment made in this declaration is punishable under |
| 18 USC 1001 by fine or imprisonment of not mo | re than five (5) years, or both. |
| Poocusigned by: /Kon Diamant/ Ron Diamant June 28, 2020 Date | |

| Filing Date June 30, 2020 | Attorney Docket No. 097307-1194186 (139200US Client Docket No. P70864-US01 |
|--|---|
| Title of Invention: EMULATING FINE-GRAINED | SPARSITY IN A SYSTOLIC ARRAY |
| Inventors: Paul Gilbert Meyer, Thiam Khean F Vivekraja | ah, Randy Renfu Huang, Ron Diamant, Vignesh |
| <u>DECLARATION</u> As a below named inventor, I hereby declare the | at: |
| This declaration is directed to: | |
| igstyle the attached application; or | |
| United States Patent Application no | ımber; or |
| PCT International Application number | per filed on |
| The above-identified application was made or a | outhorized to be made by me. |
| I believe that I am the original inventor or an or application. | iginal joint inventor of a claimed Invention in the |
| I have reviewed and understand the contents of | f the above-identified application, and acknowledge |
| the duty to disclose to the US Patent & Tradem | ark Office all information known to me to be |
| material to the patentability as defined in 37 CI | FR 1.56. |
| I hereby acknowledge that any willful false stat | ement made in this declaration is punishable under |
| 18 USC 1001 by fine or imprisonment of not mo | ore than five (5) years, or both. |
| | |
| · | |
| Vignesh Vivekraja | |
| Date | |

Page 9 of 9

U.S. Patent Appln. No. 16/917,033 Filing Date 30 Jun 2020 Attorney Docket No. AMZ2P152 Client Docket No. P70864-US01

<u>PARTIES TO THE ASSIGNMENT</u>

Assignor(s):

Vignesh Vivekraja 410 Terry Avenue North Seattle, WA 98109-5210

Assignee:

Amazon Technologies, Inc. PO Box 81226 Seattle, WA 98108-1226

AGREEMENT

WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled "EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY" (Invention) for which a nonprovisional application for United States Letters Patent (Application):

| was filed on 30 Jun 2020 and accorded U.S. Application No. 16/917,033; or |
|--|
| will be filed concurrently with the submission of this executed PATENT ASSIGNMEN |
| for recordation. ASSIGNOR(S) hereby authorizes and requests ASSIGNEE'S lega |
| representatives, of Weaver Austin Villeneuve & Sampson LLP, associated wit |
| Customer No. 136609, to insert in the header above and here in parentheses (U.S |
| Patent Application No, filed) this application's U.S |
| application number and filing date, when known. |

WHEREAS, ASSIGNEE, a corporation of the State of Nevada, is desirous of acquiring the entire right, title and interest in and to the Invention and in and to any letters patent that may be granted therefor in the United States and in any and all foreign countries.

Page 1 of 4

U.S. Patent Appln, No. 16/917,033 Filing Date 30 Jun 2020

Attorney Docket No. AMZ2P152

Client Docket No. P70864-US01

Title of Invention: EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY

NOW, THEREFORE, in exchange for good and valuable consideration, the receipt of

which is hereby acknowledged, ASSIGNOR(S) hereby sell, assign and transfer unto ASSIGNEE its

successors and assigns, the entire right, title and interest in and to said invention and any

improvements thereto, said Application and any and all letters patent which may be granted for

said Invention in the United States of America and its territorial possessions and in any and all

foreign countries, and in any and all provisional, divisions, reissues, re-examinations and

continuations thereof, including the right to file foreign applications directly in the name of

ASSIGNEE and to claim priority rights deriving from said Application to which said foreign

applications are entitled by virtue of international convention, treaty or otherwise, said

Invention, Application and all letters patent on said Invention to be held and enjoyed by

ASSIGNEE and its successors and assigns for their use and benefit and of their successors and

assigns as fully and entirely as the same would have been held and enjoyed by ASSIGNOR(S) had

this assignment, transfer and sale not been made. ASSIGNOR(S) hereby authorize and request

the Commissioner of Patents and Trademarks, as well as all other applicable patent offices

throughout the world, to issue all letters patent on said Invention to ASSIGNEE. ASSIGNOR(S)

agree to execute all instruments and documents required for the making and prosecution of

applications for United States and foreign letters patent on said Invention, for litigation

regarding said letters patent, or for the purpose of protecting title to said invention or letters

patent therefor.

AND ASSIGNOR(S) DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its

successors, legal representatives, and assigns all claims for damages and all remedies arising out

of any violation of the rights assigned hereby that may have accrued prior to the date of

assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue

Page 2 of 4

U.S. Patent Appln. No. 16/917,033

Filing Date 30 Jun 2020

Attorney Docket No. AMZ2P152 Client Docket No. P70864-US01

Title of Invention: EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY

for, collect, and retain damages for past infringements of said letters patent before or after

issuance.

AND ASSIGNOR(S) DOES HEREBY covenant and agree that ASSIGNOR(S) will

communicate to ASSIGNEE, its successors, legal representatives and assigns, any facts known to

ASSIGNOR respecting the Invention or said Application, and testify in any legal proceeding, assist

in the preparation of any other patent property relating to the Application and the Invention or

any improvements made thereto, sign/execute all lawful papers, provide all requested

documents, execute and make all rightful oaths and/or declarations in connection with the

Application and the Invention including any improvements made thereto, any patent

applications filed therefrom, and any continuing application filed from any of the

aforementioned applications, and generally do everything possible to aid ASSIGNEE, its

successors, legal representatives and assigns, to obtain and enforce proper patent protection for

the Invention in all countries. These provisions are binding upon ASSIGNOR's heirs, legal

representatives, administrators, and assigns.

Page 3 of 4

U.S. Patent Appln. No. 16/917,033 Filing Date 30 Jun 2020

Attorney Docket No. AMZZP152 Client Docket No. P70864-US01

Title of Invention: EMULATING FINE-GRAINED SPARSITY IN A SYSTOLIC ARRAY **DECLARATION** As a below named inventor, I hereby declare that: This declaration is directed to: the attached application; or United States Patent Application number 16/917,033 filed on 30 Jun 2020; or PCT International Application number ______filed on ______. The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed Invention in the application.

I have reviewed and understand the contents of the above-identified application, and acknowledge the duty to disclose to the US Patent & Trademark Office all information known to me to be material to the patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

ソルラのといし Vignesh Vivekraja カールション

RECORDED: 11/03/2022

Page 4 of 4