505291485 01/23/2019

PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------|----------------|
| . ABHIGYAN | 12/13/2018 |
| WEI ZHANG | 01/12/2019 |
| TIMOTHY WOOD | 01/16/2019 |

RECEIVING PARTY DATA

| Name: | AT&T INTELLECTUAL PROPERTY I, L.P. |
|-------------------|------------------------------------|
| Street Address: | 675 WEST PEACHTREE STREET, NW |
| City: | ATLANTA |
| State/Country: | GEORGIA |
| Postal Code: | 30308 |
| Name: | THE GEORGE WASHINGTON UNIVERSITY |
| Street Address: | RICE HALL, SUITE 601 |
| Internal Address: | 2121 I STREET, NW |
| City: | DISTRICT OF COLUMBIA |
| State/Country: | WASHINGTON |
| Postal Code: | 20052 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16222711 |

CORRESPONDENCE DATA

Fax Number: (215)568-3439

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: 2155683100

Email: assignments@bakerlaw.com **Correspondent Name:** BAKER HOSTETLER LLP Address Line 1: 2929 ARCH STREET

Address Line 2: CIRA CENTRE, 12TH FLOOR

Address Line 4: PHILADELPHIA, PENNSYLVANIA 19104

ATTORNEY DOCKET NUMBER: 2018-0268/101900.002181

> **PATENT** REEL: 048108 FRAME: 0230

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| NAME OF SUBMITTER: | /OUIDA M. HOWARD |
|--|-------------------|
| SIGNATURE: | /Ouida M. Howard/ |
| DATE SIGNED: | 01/23/2019 |
| Total Attachments: 7 | |
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ASSIGNMENT

WHEREAS I, Abhigyan residing at 24 Jones Street, Apartment 211, Newark, New Jersey 07103 hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "MODEL-BASED LOAD BALANCING FOR NETWORK DATA PLANE," having AT&T Docket No. 2018-0268, the patent application to be filed in the United States Patent & Trademark Office; and

WHEREAS, AT&T Intellectual Property I, L.P., a Partnership organized and existing under the laws of Nevada and having an address at 675 West Peachtree Street, NW, Atlanta, Georgia 30308 (hereinafter referred to as Assignee), desires to acquire the entire right, title and interest for the United States of America and elsewhere throughout the world in and to said invention and the patent application identified above, including any and all divisions and continuations thereof and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues and prolongations thereto;

NOW THEREFORE, be it known that for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I, as Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my entire right, title, and interest in and to this invention and this non-provisional application, and all divisions, substitutions, and continuations thereof; and all Letters Patent of the United States which may be granted thereon, and all reexaminations and reissues thereof; and all rights to claim priority on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application; and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, including certificates of inventions, utility models, industrial design protection, design patent protection, and other governmental grants or issuances; and all extensions, renewals, prolongations, and reissues thereof; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term and terms for all such patents;

AND, I HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I HEREBY covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any assignment, sale, license, agreement, or encumbrance in conflict with this Assignment;

AND, I HEREBY further covenant and agree, for the Assignor and the Assignor's legal representatives, that I will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to us respecting this invention; assist the Assignee in the prosecution of the patent application identified above; assist in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; testify in any interference, litigation, or other legal proceeding; sign all lawful papers when called upon to do so; execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns; execute all divisional, continuation, and reissue applications; make all rightful oaths and generally do everything possible to aid Assignee, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee; and hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without compensation, but at the expense of Assignee or its representatives.

AND, I HEREBY consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of AT&T Intellectual Property I, L.P. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

This Assignment may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original, and such counterparts together shall constitute one and the same instrument. A facsimile copy of this Assignment, or any form of an electronic copy of this Assignment, including the signature pages hereto, shall be deemed to be an original.

| IN TESTIMONY WHEREOF, I have hereunto | set my hand this 13 day of December, 2018. |
|---|--|
| • | Dolog |
| _ | Abhigyan |
| State of NEW JERSEY County of ESSEX | |
| County of ESSEX | |
| On this 13 day of DECEMBER 2018, to appeared ABHIGHT , and acl deed for the purpose herein set forth. | before me a Notary Public in and for the above County and State, personally knowledged the execution of the foregoing assignment as his/her free act and |
| Fry - | |
| Notary Public My Commission | Expires:PETER E. OBI |

Docket No.: 101900.002181

ASSIGNMENT

THIS ASSIGNMENT, made on the date set forth below by Timothy WOOD, residing at 5452 Wingborne Court, Columbia, MD 21045; Wei ZHANG, residing at 2116 166th Place NE, Bellevue, WA 98008 (hereinafter referred to as the Assignor(s)), witnesseth:

WHEREAS, said Assignor(s) have invented certain new and useful improvements in MODEL-BASED LOAD BALANCING FOR NETWORK DATA PLANE set forth in an Application for Letters Patent of the United States, filed on December 17, 2018 as a Non-Provisional Application No. 16/222,711; and

WHEREAS, The George Washington University, a Congressionally Chartered Not-For-Profit Corporation, having its principal place of business at Rice Hall, Suite 601, 2121 I Street, NW, Washington, DC 20052 (hereinafter referred to as the Assignee) is desirous of acquiring the entire right, title and interest in and to said inventions and said application for Letters Patent of the United States, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the said Assignor(s) have sold, assigned, transferred and set over, and by these presents does sell, assign, transfer and set over, unto the Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions, application for Letters Patent, and any and all Letters Patent or Patents in the United States of America and all foreign countries which may be granted therefor 101900.002181 1

and thereon, and in and to any and all non-provisionals, divisions, continuations, and continuations-in-part of said application, or reissues or extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, and all rights of priority resulting from the filing of the application(s) and/or rights to claim priority from the application(s), the same to be held and enjoyed by the said Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted, as fully and entirely as the same would have been held and enjoyed by the Assignor(s), had this sale and assignment not been made.

AND for the same consideration, the said Assignor(s) hereby covenants and agrees to and with the said Assignee, its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, the said Assignor(s) is the sole and lawful owner of the entire right, title and interest in and to the said inventions and the application for Letters Patent above-mentioned, and that the same are unencumbered and that the said Assignor(s) have good and full right and lawful authority to sell and convey the same in the manner herein set forth.

AND for the same consideration, the said Assignor(s) hereby covenants and agrees to and with the said Assignee, its successors, legal representatives and assigns, that the said Assignor(s) will, whenever counsel of the said Assignee or the counsel of its successors, legal representatives and assigns, shall advise that any proceeding in connection with said inventions, or said application for Letters Patent, or any proceeding in connection with Letters Patent for said inventions in any country, including post-grant proceedings (including interference proceedings, post-grant review, Inter Partes Review, Reexamination, derivation, Supplemental Examination and Reissue), is lawful and desirable, that any non-provisional, division, continuation or 2

continuation-in-part of any application for Letters Patent, post-grant proceeding, or reissue or extension of any Letters Patent, to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, validity and defense of Letters Patent for said inventions in any country, without charge to the said Assignor(s), its successors, legal representatives and assigns, but at the cost and expense of the said Assignee, its successors, legal representatives and assigns.

AND said Assignor(s) hereby requests the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to the said Assignee, as the assignee of said inventions and the Letters Patent to be issued thereon for the sole use and behoof of the said assignee, its successors, legal representatives and assigns.

The undersigned hereby grants the firm of Blank Rome LLP the power to insert on this

Assignment any further identification which 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.

101900.002181

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| Date: | Timothy WOOD |
|---|---|
| STATE OF COUNTY OF | |
| | , 2019, personally before me came Timothy WOOD e the person described in and who signed the annexed acknowledged that they executed the same. |
| | NOTARY PUBLIC |
| | My Commission Expires: |
| | |
| | |
| | • |
| Date: 1/12/2019 | Web Zhanes Wei ZHANG |
| STATE OF Washington COUNTY OF King | |
| known to me, and known to me to be | , 2019, personally before me came Wei ZHANG ethe person described in and who signed the annexed acknowledged that they executed the same. |
| | NOTARY PUBLIC The my |
| YANG YANG Notary Public State of Washington Commission # 173402 My Comm. Expires Aug 20, 2022 | My Commission Expires: Aug - 20 - 20 - 22 |
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| Date: 1-16-2019 | Timothy WOOD |
|---|--|
| STATE OF District of Co | Tumbia |
| | , 2019, personally before me came Timothy WOOD e the person described in and who signed the annexed acknowledged that they executed the same. |
| | NOTARY PUBLIC Amona M. En |
| | My Commission Expires: Mov. 14, 2019 |
| District of Columbia: 88 Subscribed and Sworn to before me this 16th day of Juneary 2019 Analysis Notary Public D.C. Notary Public D.C. | EXPINES COMMISSION E |
| 1100.14, 2017 | ANY OF AN |
| Date: | Wei ZHANG |
| STATE OF | |

COUNTY OF

On this day of , 2019, personally before me came Wei ZHANG known to me, and known to me to be the person described in and who signed the annexed Assignment, and being duly sworn, acknowledged that they executed the same.

NOTARY PUBLIC

My Commission Expires:

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