

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT7613624

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
MAHBOD AMOUIE	01/12/2022
EVAN T. GEBHARDT	01/07/2022
GONGLI DUAN	01/07/2022
MYLES GRASON AKIN	01/12/2022
WEI LIU	01/12/2022
TIANCHEN WANG	01/07/2022
MAYURESCH MANOJ SARDESAI	01/10/2022
ILYA A. LAVRIK	01/10/2022
RECEIVING PARTY DATA	
Name:	NORFOLK SOUTHERN CORPORATION
Street Address:	650 WEST PEACHTREE STREET NW
City:	ATLANTA
State/Country:	GEORGIA
Postal Code:	30308
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	17962971
CORRESPONDENCE DATA	
Fax Number:	(404)365-9532
<i>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.</i>	
Phone:	4042337000
Email:	mmccaskill@mmmlaw.com
Correspondent Name:	MONTRELL MCCASKILL
Address Line 1:	1600 ATLANTA FINANCIAL CENTER
Address Line 2:	3343 PEACHTREE ROAD, N.E.
Address Line 4:	ATLANTA, GEORGIA 30326
ATTORNEY DOCKET NUMBER:	37079-152672
NAME OF SUBMITTER:	MONTRELL MCCASKILL
SIGNATURE:	/Montrell McCaskill/

PATENT

DATE SIGNED:	10/27/2022
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Total Attachments: 54

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ASSIGNMENT

THIS ASSIGNMENT is made by **Mahbod Amouie**, residing at 2626 Peachtree Road NW, Atlanta, Georgia 30305; **Evan T. Gebhardt**, residing at 761 Morosgo DR NE Unit 512, Atlanta, Georgia 30324; **Gongli Duan**, residing at 2382 Ivy Mountain Drive, Snellville, Georgia 30078, **Myles Grayson Akin**, residing at 2505 Woodfern Ct, Marietta, Georgia 30062, **Wei Liu**, residing at 8431 Woodbox Road, Manlius, New York 13104, **Tianchen Wang**, residing at 463 Summer Dr., Atlanta, Georgia 30328, **Mayuresh Manoj Sardesai**, residing at 95 8th St NW Unit 208, Atlanta, Georgia 30309; and **Ilya A. Lavrik**, residing at 3400 Malone Drive, United 217, Atlanta, Georgia 30341 (hereinafter referred to as “Assignors”).

WHEREAS, Assignors have invented certain new and useful inventions and improvements in **“MACHINE-LEARNING FRAMEWORK FOR DETECTING DEFECTS OR CONDITIONS OF RAILCAR SYSTEMS”**, set forth in a Non-Provisional Patent Application for Letters Patent of the United States, filed on December 13, 2021, as U.S. Application No. 17/549,499; hereinafter referred to as the “Application”); and

WHEREAS, **Norfolk Southern Corporation**, a Corporation organized under and pursuant to the laws of the State of Virginia, having its principal place of business at Three Commercial Place, Norfolk, Virginia 23510 (hereinafter referred to as “Assignee”), is desirous of acquiring the entire right, title and interest in and to said inventions and said Applications for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefore and thereon.

NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, Assignors have sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions and Applications, and in and to any and all direct and indirect divisions, non-provisional applications, continuations and continuations-in-part of said Applications, and any and all Letters Patent in the United States and all foreign countries which

Atty Docket No. 37079-147604

may be granted therefor and thereon, and reissues, reexaminations and extensions of said Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by Assignee, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignors, had this sale and assignment not been made.

AND for the same consideration, Assignors hereby represent and warrant to Assignee, its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, except for any rights, titles and/or interests that have arisen to Assignee under law or that have already been transferred to Assignee, Assignors are the sole and lawful owners of the entire right, title and interest in and to the said inventions and Application, and that the same are unencumbered and that Assignors 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, Assignors hereby covenant and agree to and with Assignee, its successors, legal representatives and assigns, that Assignors will sign all papers and documents, take all lawful oaths and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of the Application and any Letters Patent issuing therefrom for said inventions, without charge to Assignee, its successors, legal representatives and assigns, whenever counsel of Assignee, or counsel of its successors, legal representatives and assigns, shall advise: that any proceeding in connection with said inventions, or said Application, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions in any country, including but not limited to interference proceedings, is lawful and desirable; or, that any division, continuation or continuation-in-part of the Application, or any reissue, reexamination or extension of any Letters Patent, to be obtained thereon, is lawful and desirable.

AND Assignors warrant and represent that the Assignors individually are not aware of any information that is material to patentability of the above-mentioned inventions, namely, any information that, alone or in combination with other information, establishes on its face the

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unpatentability of the inventions or is inconsistent with arguments of patentability made to the U.S. Patent & Trademark Office. Material information may include devices, products, publications, and so forth, that are similar to the present inventions, and/or any public disclosure, commercial use, or offer for sale more than one year prior to the filing date of the Applications.

AND Assignors hereby request the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the Letters Patent to be issued thereon, for the sole use and benefit of Assignee, its successors, legal representatives and assigns.

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MORRIS, MANNING & MARTIN, LLP

All practitioners at Customer Number 24728

[Signatures are on following pages.]

Atty Docket No. 37079-147604

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
_____, 2022.

MAHBOD AMOUIE

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
_____, 2022.

EVAN T. GEBHARDT

IN TESTIMONY WHEREOF, I have hereunto set my hand this 1/7/2022 day of
1/7/2022, 2022.

DocuSigned by:

GONGLI DUAN

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_____, 2022.

MYLES GRASON AKIN

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TIANCHEN WANG

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_____, 2022.

MAYURESCH MANOJ SARDESAI

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of

_____, 2022.

ILYA A. LAVRIK

Atty Docket No. 37079-147604

ASSIGNEE:

_____ day of _____, 2022

Name:

Title:

Norfolk Southern Corporation

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[Signatures are on following pages.]

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_____, 2022.

MAHBOD AMOUIE

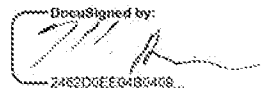
IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
_____, 2022.

EVAN T. GEBHARDT

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
_____, 2022.

GONGLI DUAN

IN TESTIMONY WHEREOF, I have hereunto set my hand this 1/10/2022 day of
1/10/2022, 2022.

DocuSigned by:

2482DCE50480408...

MYLES GRASON AKIN

Atty Docket No. 37079-147604

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of

_____, 2022.

WEI LIU

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of

_____, 2022.

TIANCHEN WANG

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of

_____, 2022.

MAYURESCH MANOJ SARDESAI

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of

_____, 2022.

ILYA A. LAVRIK

Atty Docket No. 37079-147604

ASSIGNEE:

_____ day of _____, 2022

Name:

Title:

Norfolk Southern Corporation

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All practitioners at Customer Number 24728

[Signatures are on following pages.]

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MAHBOD AMOUIE

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ILYA A. LAVRIK

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MAYURESCH MANOJ SARDESAI

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_____, 2022.

ILYA A. LAVRIK

Atty Docket No. 37079-147604

ASSIGNEE:

_____ day of _____, 2022

Name:

Title:

Norfolk Southern Corporation

ASSIGNMENT

THIS ASSIGNMENT is made by **Mahbod Amouie**, residing at 2626 Peachtree Road NW, Atlanta, Georgia 30305; **Evan T. Gebhardt**, residing at 761 Morosgo DR NE Unit 512, Atlanta, Georgia 30324; **Gongli Duan**, residing at 2382 Ivy Mountain Drive, Snellville, Georgia 30078, **Myles Grayson Akin**, residing at 2505 Woodfern Ct, Marietta, Georgia 30062, **Wei Liu**, residing at 8431 Woodbox Road, Manlius, New York 13104, **Tianchen Wang**, residing at 463 Summer Dr., Atlanta, Georgia 30328, **Mayuresh Manoj Sardesai**, residing at 95 8th St NW Unit 208, Atlanta, Georgia 30309; and **Ilya A. Lavrik**, residing at 3400 Malone Drive, United 217, Atlanta, Georgia 30341 (hereinafter referred to as “Assignors”).

WHEREAS, Assignors have invented certain new and useful inventions and improvements in **“MACHINE-LEARNING FRAMEWORK FOR DETECTING DEFECTS OR CONDITIONS OF RAILCAR SYSTEMS”**, set forth in a Non-Provisional Patent Application for Letters Patent of the United States, filed on December 13, 2021, as U.S. Application No. 17/549,499; hereinafter referred to as the “Application”); and

WHEREAS, **Norfolk Southern Corporation**, a Corporation organized under and pursuant to the laws of the State of Virginia, having its principal place of business at Three Commercial Place, Norfolk, Virginia 23510 (hereinafter referred to as “Assignee”), is desirous of acquiring the entire right, title and interest in and to said inventions and said Applications for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefore and thereon.

NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, Assignors have sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions and Applications, and in and to any and all direct and indirect divisions, non-provisional applications, continuations and continuations-in-part of said Applications, and any and all Letters Patent in the United States and all foreign countries which

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may be granted therefor and thereon, and reissues, reexaminations and extensions of said Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by Assignee, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignors, had this sale and assignment not been made.

AND for the same consideration, Assignors hereby represent and warrant to Assignee, its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, except for any rights, titles and/or interests that have arisen to Assignee under law or that have already been transferred to Assignee, Assignors are the sole and lawful owners of the entire right, title and interest in and to the said inventions and Application, and that the same are unencumbered and that Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth.

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AND Assignors warrant and represent that the Assignors individually are not aware of any information that is material to patentability of the above-mentioned inventions, namely, any information that, alone or in combination with other information, establishes on its face the

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MORRIS, MANNING & MARTIN, LLP

All practitioners at Customer Number 24728

[Signatures are on following pages.]

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MYLES GRASON AKIN

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DocuSigned by:
Wei Liu
5E5485590DE6408...

WEI LIU

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DocuSigned by:
Mahbod Amouie

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All practitioners at Customer Number 24728

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TIANCHEN WANG

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DocuSigned by:
Mayuresh Sardesai
DocuSignature
MAYURESCH MANOJ SARDESAI

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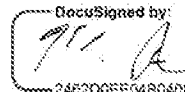
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246200550400400

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unpatentability of the inventions or is inconsistent with arguments of patentability made to the U.S. Patent & Trademark Office. Material information may include devices, products, publications, and so forth, that are similar to the present inventions, and/or any public disclosure, commercial use, or offer for sale more than one year prior to the filing date of the Applications.

AND Assignors hereby request the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the Letters Patent to be issued thereon, for the sole use and benefit of Assignee, its successors, legal representatives and assigns.

AND Assignors hereby grant the following individuals 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:

MORRIS, MANNING & MARTIN, LLP

All practitioners at Customer Number 24728

[Signatures are on following pages.]

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IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
_____, 2022.

MAHBOD AMOUIE

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
_____, 2022.

EVAN T. GEBHARDT

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
_____, 2022.

GONGLI DUAN

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
_____, 2022.

MYLES GRASON AKIN

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IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
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WEI LIU

IN TESTIMONY WHEREOF, I have hereunto set my hand this 1/7/2022 day of
1/7/2022, 2022.



TIANCHEN WANG

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
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MAYURESCH MANOJ SARDESAI

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_____, 2022.

ILYA A. LAVRIK

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ASSIGNEE:

_____ day of _____, 2022

Name:

Title:

Norfolk Southern Corporation