# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6993855

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

**CONVEYING PARTY DATA**

| Name | Execution Date |
|---|---|
| FLORIDA ATLANTIC UNIVERSITY RESEARCH CORPORATION ("FAURC") | 10/25/2021 |

**RECEIVING PARTY DATA**

| | |
|---|---|
| **Name:** | OP SOLUTIONS, LLC |
| **Street Address:** | 368 MIDDLE STREET |
| **City:** | AMHERST |
| **State/Country:** | MASSACHUSETTS |
| **Postal Code:** | 01002 |

**PROPERTY NUMBERS Total: 23**

| Property Type | Number |
|---|---|
| **Application Number:** | 62856339 |
| **PCT Number:** | US1938499 |
| **Application Number:** | 62883503 |
| **Application Number:** | 62883484 |
| **Application Number:** | 62883480 |
| **Application Number:** | 62883459 |
| **Application Number:** | 62883454 |
| **Application Number:** | 62883407 |
| **Application Number:** | 62932597 |
| **PCT Number:** | US1963707 |
| **PCT Number:** | US1963704 |
| **PCT Number:** | US1963698 |
| **PCT Number:** | US1963694 |
| **Application Number:** | 63009978 |
| **Application Number:** | 17394511 |
| **Application Number:** | 63235552 |
| **Application Number:** | 63235438 |
| **PCT Number:** | US2147927 |
| **PCT Number:** | US2147902 |
| **PCT Number:** | US2147886 |

| Property Type | Number |
|---|---|
| **PCT Number:** | US2147857 |
| **Application Number:** | 63249984 |
| **Application Number:** | 63252266 |

**CORRESPONDENCE DATA**

**Fax Number:**

***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.***

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|---|---|
| **NAME OF SUBMITTER:** | KEEGAN M. CALDWELL |
| **SIGNATURE:** | /KEEGAN M. CALDWELL/ |
| **DATE SIGNED:** | 10/28/2021 |

**Total Attachments: 4**
source=Assignment from FAURC to OP Solutions 1097-031USP1 - 1097-054USP1 (Fully Executed)#page1.tif
source=Assignment from FAURC to OP Solutions 1097-031USP1 - 1097-054USP1 (Fully Executed)#page2.tif
source=Assignment from FAURC to OP Solutions 1097-031USP1 - 1097-054USP1 (Fully Executed)#page3.tif
source=Assignment from FAURC to OP Solutions 1097-031USP1 - 1097-054USP1 (Fully Executed)#page4.tif

# ASSIGNMENT

We, Florida Atlantic University Research Corporation ("FAURC"), Boca Raton, FL, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, hereby assign, sell and transfer to OP Solutions, LLC, a Massachusetts limited liability company with offices in Amherst, Massachusetts, and to its successors, assigns and legal representatives, collectively hereinafter referred to as the ASSIGNEE: (1) our entire right, title and interest for the United States and in all countries as assigned to FAURC by Borivoje Furht, and Hari Kalva, in and to the inventions and discoveries and applications which are disclosed in the applications for United States Letters Patent identified in Appendix "A" attached hereto; (2) the full and complete right to file patent applications in the name of the ASSIGNEE, its designee, or in my/our names as the ASSIGNEE, or its designee's election, on the aforesaid inventions and discoveries in all countries of the world; (3) the entire right. title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and ( 4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.

We hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in the United States and throughout the world to the ASSIGNEE of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

We further agree at any time to execute and to deliver upon request of the ASSIGNEE such additional documents, if any, as are reasonably necessary to secure patent protection on said inventions and discoveries throughout all countries of the world, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be reasonably necessary.

We hereby covenant that no assignment, sale, agreement, or encumbrance has been or will be made or entered into which would conflict with this assignment.

We further covenant that ASSIGNEE will upon its request, be provided promptly with all pertinent facts and documents relating to Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR, and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

ASSIGNEE acknowledges that ASSIGNOR has taken no steps to obtain legal protection for the above-described invention or discovery, and ASSIGNOR makes no representations as to their patentability.

ASSIGNEE represents that Dr. Velibor Adzic is a consultant to ASSIGNEE, and ASSIGNEE acknowledges that ASSIGNOR has not received any title right or interest in the aforementioned invention from Dr. Velibor Adzic.

The parties agree that this ASSIGNMENT shall not be considered an amendment or modification per section 11.6 of the Sponsored Research Agreement between the parties with a last signature date of March 30, 2018, and that this Assignment does not modify that Agreement in any other respect.

Date: 10/25/2021

**Daniel Flynn**
**President**
**Florida Atlantic University**
**Research Corporation [ASSIGNOR] Boca Raton, FL**
**This ASSIGNMENT is approved for use by FAURC as to form and legality. If it remains unchanged, it requires no further legal review.**

Date: 2021/10/26

Robert Moore

**Robert Moore**
**President**
**OP Solutions, LLC [ASSIGNEE]**
**368 Middle Street, Amherst, MA 01002**

Appendix A:

| Docket No. | Application No. | Date Filed | Application Title |
|---|---|---|---|
| 1097-031USP1 | 62/856,339 | 6/3/2019 | MERGE CANDIDATES REORDER BASED ON GLOBAL MOTION VECTOR |
| 1097-034PCT1 | PCT/US19/38499 | 6/21/2019 | BLOCK LEVEL GEOMETRIC PARTITIONING |
| 1097-010USP1 | 62/883,503 | 8/6/2019 | FRAME BUFFERING IN ADAPTIVE RESOLUTION MANAGEMENT |
| 1097-009USP1 | 62/883,484 | 8/6/2019 | IMPLICIT SIGNALING OF ADAPTIVE RESOLUTION MANAGEMENT BASED ON FRAME TYPE |
| 1097-008USP1 | 62/883,480 | 8/6/2019 | ADAPTIVE RESOLUTION MANAGEMENT USING SUB-FRAMES |
| 1097-007USP1 | 62/883,459 | 8/6/2019 | ADAPTIVE RESOLUTION MANAGEMENT SIGNALING |
| 1097-006USP1 | 62/883,454 | 8/6/2019 | ADAPTIVE RESOLUTION MANAGEMENT PREDICTION RESCALING |
| 1097-005USP1 | 62/883,407 | 8/6/2019 | BLOCK-BASED ADAPTIVE RESOLUTION MANAGEMENT |
| 1097-037USP1 | 62/932,597 | 11/8/2019 | METHODS AND SYSTEMS FOR ADAPTIVE CROPPING |
| 1097-014PCT1 | PCT/US19/63707 | 11/27/2019 | ADAPTIVE TEMPORAL FILTER FOR AN UNAVAILABLE REFERENCE PICTURE CROSS-REFERENCE TO RELATED APPLICATIONS |
| 1097-013PCT1 | PCT/US19/63704 | 11/27/2019 | BLOCK-BASED SPATIAL ACTIVITY MEASURES FOR PICTURES CROSS-REFERENCE TO RELATED APPLICATIONS |
| 1097-012PCT1 | PCT/US19/63698 | 11/27/2019 | BLOCK-BASED PICTURE FUSION FOR CONTEXTUAL SEGMENTATION AND PROCESSING |
| 1097-011PCT1 | PCT/US19/63694 | 11/27/2019 | ADAPTIVE BLOCK UPDATE OF UNAVAILABLE REFERENCE FRAMES USING EXPLICIT AND IMPLICIT SIGNALING |
| 1097-040USP1 | 63/009,978 | 4/14/2020 | METHODS AND SYSTEMS OF VIDEO CODING USING REFERENCE REGIONS |
| 1097-005USC1 | 17/394,511 | 8/5/2021 | BLOCK-BASED ADAPTIVE RESOLUTION MANAGEMENT |
| 1097-052USP1 | 63/235,552 | 8/20/2021 | SYSTEMS AND METHODS FOR JOINT OPTIMIZATION TRAINING |
| 1097-051USP1 | 63/235,438 | 8/20/2021 | SYSTEMS AND METHODS FOR DUAL-PURPOSE ENCODER-SIDE PREPROCESSING |
| 1097-044PCT1 | PCT/US21/47927 | 8/27/2021 | METHODS AND SYSTEMS FOR COMBINED LOSSLESS AND LOSSY CODING |
| 1097-043PCT1 | PCT/US21/47902 | 8/27/2021 | METHODS AND SYSTEMS FOR COMBINED LOSSLESS AND LOSSY CODING |
| 1097-042PCT1 | PCT/US21/47886 | 8/27/2021 | METHODS AND SYSTEMS OF ADAPTIVE GEOMETRIC PARTITIONING |
| 1097-041PCT1 | PCT/US21/47857 | 8/27/2021 | METHODS AND SYSTEMS OF ADAPTIVE GEOMETRIC PARTITIONING |

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|---|---|---|---|
| 1097-053USP1 | 63/249,984 | 9/29/2021 | SYSTEMS AND METHODS FOR SCALABLE VIDEO CODING FOR MACHINES |
| 1097-054USP1 | 63/252,266 | 10/5/2021 | SYSTEMS AND METHODS FOR PREDICTIVE CODING |