#### 502685559 02/19/2014

#### PATENT ASSIGNMENT COVER SHEET

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| NATURE OF CONVEYANCE: | ASSIGNMENT     |

#### **CONVEYING PARTY DATA**

| Name              | Execution Date |
|-------------------|----------------|
| SINA FARSIU       | 02/18/2014     |
| STEPHANIE J. CHIU | 02/18/2014     |
| JOSEPH A. IZATT   | 02/18/2014     |

#### **RECEIVING PARTY DATA**

| Name:           | DUKE UNIVERSITY |  |
|-----------------|-----------------|--|
| Street Address: | 2812 ERWIN ROAD |  |
| City:           | DURHAM          |  |
| State/Country:  | NORTH CAROLINA  |  |
| Postal Code:    | 27705           |  |

#### PROPERTY NUMBERS Total: 1

| Property Type | Number    |
|---------------|-----------|
| PCT Number:   | US1413243 |

#### **CORRESPONDENCE DATA**

 Fax Number:
 (888)737-1649

 Phone:
 9193424882

Email: jsadler@olivelawgroup.com

Correspondence will be sent via US Mail when the email attempt is unsuccessful.

Correspondent Name: BENTLEY J. OLIVE

Address Line 1: 125 EDINBURGH SOUTH DRIVE

Address Line 2: SUITE 100

Address Line 4: CARY, NORTH CAROLINA 27511

|                         | PATENT             |
|-------------------------|--------------------|
| Signature:              | /Bentley J. Olive/ |
| NAME OF SUBMITTER:      | BENTLEY J. OLIVE   |
| ATTORNEY DOCKET NUMBER: | 210/20 PCT         |

502685559 REEL: 032242 FRAME: 0693

| Date:  | 02/19/2014                                   |
|--|--|
| Total Attachments: 5 source=DU3889PCT - Executed Assignments | nt#page2.tif<br>nt#page3.tif<br>nt#page4.tif |

PATENT REEL: 032242 FRAME: 0694

#### **ASSIGNMENT**

WHEREAS. We. Sina Farsiu of Durham. North Carolina; Stephanie J. Chiu of Durham, North Carolina; and Joseph A. Izatt of Raleigh, North Carolina; (hereinafter "Assignor"), have certain new and useful improvements in SEGMENTATION IDENTIFICATION OF CLOSED-CONTOUR FEATURES IN IMAGES USING GRAPH THEORY AND QUASI-POLAR TRANSFORM, for which an International Application was made on January 27, 2014, as Patent Cooperation Treaty Application No. PCT/US14/13243, and which claims priority from U.S. Provisional Patent Application 61/756527 filed on January 25, 2013. (I hereby authorize the attorney recording this assignment to insert the Serial No. and filing date of the application to which this assignment refers to if such information is unavailable as of the execution date of this assignment).

AND, WHEREAS, Duke University, a university having its principal office and place of business at 2812 Erwin Road, Durham, North Carolina (hereinafter "Assignee"), is desirous of acquiring an interest therein.

NOW, THEREFORE, To Whom It May Concern, be it known that for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor has assigned and by these presents does hereby sell, assign, transfer, and convey unto the Assignee, its successors and assigns, his entire right, title, and interest in and to the invention and application, including the right to sue for past infringements and any other prior occurring rights, provided any such rights exist, and in and to any and all domestic and foreign patent applications filed on the invention, and in and to any and all continuations, continuations-in-part, or divisions thereof, and in and to any and all Letters Patent of the United States of America, and all foreign countries or reissues thereof which may be granted therefor or thereon, for the full end of the term for which said Letters Patent may be granted, together with his right to claim the priority of said application in all foreign countries in accordance with the International Convention, the same to be held and enjoyed by said Assignee, its successors and assigns, as fully and entirely as the same would have been held and enjoyed by Assignor if this assignment and sale had not been made. Assignor further assigns to Assignee the right to claim entitlement and/or priority to any applications that entitlement or priority may be claimed for this or any later filed application.

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REEL: 032242 FRAME: 0695

The assignment of the right to claim entitlement and/or priority is executed nunc pro tunc and is

considered effective as of the filing date of the earliest application to which priority and/or

entitlement is claimed.

Assignor hereby requests that said Letters Patent be issued in accordance with this

assignment.

Assignor further covenants and agrees that, at the time of the execution and delivery of

these presents, Assignor possesses full title to the invention and application above-mentioned,

and that he has the unencumbered right and authority to make this assignment.

Assignor further covenants and agrees, and likewise binds his heirs, legal representatives

and assigns, to promptly communicate to said Assignee or its representatives any facts known to

him relating to said invention, to testify in any interference or legal proceedings involving said

invention, to execute any additional papers which may be requested to confirm the right of the

Assignee, its representatives, successors and assigns to secure patent or similar protection for the

said invention in all countries and to vest in the Assignee complete title to the said invention and

Letters Patent, without further compensation, but at the expense of said Assignee, its successors,

assigns and other legal representatives.

Signature Page Follows

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PATENT REEL: 032242 FRAME: 0696

| Executed this 18 day of Frhrung, 2014.        |
|---|
| Sina Farsiu                                   |
| Witnessed by:                                 |
| Name Date                                     |
| Kundel Kimrey Kynnel Kenny 2/18/14 Name  Name |
| *******                                       |
| Executed this day of, 2014.                   |
| Stephanie J. Chiu                             |
| Witnessed by:                                 |
| Name Date                                     |
| Name Date                                     |

| Executed this | day of               | , 2014.             |
|---------------|----------------------|---------------------|
|               |                      | Sina Farsiu         |
| Witnessed by: |                      |                     |
| Name          |                      | Date                |
| Name          |                      | Date                |
|               |                      | *********           |
| Executed this | h day of <u>Febr</u> | <u>mary</u> , 2014. |
|               |                      | Stephanie J. Chiu   |
| Witnessed by: |                      |                     |
| Name          |                      | 2014-02-18<br>Date  |
| Name (        |                      | )014-02-18<br>Date  |
|               |                      | ·                   |

Executed this & day of February, 2014.

Joseph A. Izatt

Witnessed by:

3mg 2014-02-18

Marie 2014-02-18

Name Date

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