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Collaboration Agreement

between

Charité - Universitätsmedizin Berlin
Charitéplatz 1, 10117 Berlin, Germany

represented by the Financial Director of the Faculty

- hereinafter called "Charité" -

organising institute:

NeuroCure Clinical Research Center

Clinical Neuroimmunology group

Charitéplatz 1, 10117 Berlin, Germany

- hereinafter called "Clinic/Institute" -

responsible project manager

Dr. Alexander U. Brandt

- hereinafter called "Project Manager" -

and

Medical Image and Signal Processing (MISP) Research Center
Isfahan University of Medical Sciences
Hezar Jarib St., central headquarter of Isfahan University of Medical Sciences, Isfahan
81746 73461, IRAN

represented by

Dr. Hossein Rabbani, Director of MISP Research Center

-hereinafter referred to as "MISP"

-collectively hereinafter referred to as the "Parties"

PREAMBLE

The Parties are engaged in research in the field of retinal image analysis. Charité possesses expertise and know-how in the field of optical coherence tomography and autoimmune neurologic disorders, and MISP possesses expertise and know-how in the field of retinal image analysis and deep learning.

The available expertise and know-how shall constitute the basis of the research project as defined in Appendix 1. For this reason, the Parties enter into the following agreement (hereinafter referred to as "Agreement").

§1
SUBJECT MATTER OF AGREEMENT

Both Parties will collaborate within the framework of the Research Programme as defined in Appendix 2. The Parties shall in particular exercise their best efforts to carry out the defined scientific work. No employer-employee relationship between the Parties is created as a result of this Agreement.

§2
TERMS OF REFERENCE

2.1 The basis for this Agreement shall be the Research Programme as specified in Appendices 1-3. The objectives and purposes of the Research Programme as set out in Appendix 1 to this Agreement (hereinafter referred to as "Purpose") are intended to be achieved by means of the research work as defined in this Agreement. The relevant tasks and timeline are specified in Appendix 2 to this Agreement. The contributions to be made by the parties are set forth in Appendix 3, in particular listing existing findings, experience, knowledge and property rights.

2.2 The Parties agree that the research programme shall be binding but may from time to time be adapted to reflect developments in the sphere of research. Any such adaptation shall become binding through the medium of records signed by both Parties.

2.3 On behalf of CHARITÉ, Project Manager shall carry out the activities to be performed under this Agreement; on behalf of MISP, Dr. Rahele Kafieh shall carry out the respective activities.

§3
MUTUAL PERFORMANCES

3.1 The Parties shall endeavor to accomplish the scientific objectives within the meaning of Section 2.1 by performing their obligations under this Agreement, in particular the research work, to the best of its power and ability.

3.2 The Parties shall notify each other of any experience, findings and know-how obtained during the research work and shall inform each other on a continual basis and in a suitable manner of the results of the research work as defined in this Agreement.
Following completion of the research work, the Parties shall submit a final written report to each other. The receiving Partner shall be entitled to use the contents of the final report for scientific purposes (research and teaching). The Parties shall ensure that the preparation and submission of the final report are not unduly delayed or impeded.

§4
CONFIDENTIALITY

Both Parties undertake to hold in confidence any and all documents marked as secret and any other secret information which the Parties have made available to one another in a

manner that clearly indicates their confidential nature, and not to disclose such information to any third party. Such obligation of confidentiality shall survive termination of this Agreement, but apply no longer than three (3) years following completion of the research project, and shall not extend to information that has become part of the public domain as a result of third-party publications or in any other manner, or the disclosure of which has been explicitly approved by the party to whom it relates.

§5
PUBLICATIONS

As a rule, the Work Results developed by the Parties are intended for publication. However, if the Parties intend to make a scientific publication in relation to the subject matter of this Agreement, they shall take the interests of each other into account and provide a copy of the proposed manuscript to each other for comment prior to publication, the object being to prevent either the endangerment of applications for the protection of property rights by premature publications detrimental to their novelty or the disclosure of trade secrets. Wherever possible this should not cause a delay in publication.

§6
WORK RESULTS

6.1 Work Results within the meaning of this Agreement are
- "Inventions" fit for protective rights according to § 1 German Patentgesetz
- "Qualified Know-How" according to the EU Directive No. 240/96 issued by the Commission on 31 January 1996,
- "Software" according to §§ 69a ff. German Urhebergesetz
- "Basic Know-how" not fit for protective rights

6.2 Any Work Results generated by staff members of CHARITÉ shall belong to CHARITÉ. Any Work Results generated by staff members of MISP shall belong to MISP. Jointly generated Work Results shall jointly belong to CHARITÉ and MISP. Their share in the Work Results shall be determined in accordance with the significance of the contribution to the jointly generated Work Result. Neither Partner may assign any of its rights in the jointly generated Work Result without the prior consent of the other Partner, regardless of the name under which a protective right is registered.

6.3 In accordance with the provisions of the German Employee Inventions Act, the Parties shall claim for themselves all inventions and shares in inventions made under this Agreement which are eligible for protection as property rights. The Parties shall consult with each other regarding the most appropriate procedure for registering property rights, particularly in the case of joint inventions.

§7
RIGHTS OF USE

7.1 For duration of the Agreement the Parties shall grant each other a no-charge, non-transferable and non-exclusive right of use in the Work Results if and to the extent to which this is necessary for the successful performance of the Agreement.

7.2 In addition, the Parties shall grant each other at request and in so far as is legally permissible, solely for the duration and purpose of the research project, a non-exclusive, Non-sublicensable, non-transferrable, no-charge right of use in background protective rights.

7.3 The Parties shall enter into a separate agreement in respect of any desired utilization of

the Work Results and/or background protective rights beyond the scope as specified above.

7.4 Both Parties shall be entitled to use the Work Results developed under this Agreement at no charge and in an unrestricted manner for scientific purposes (research and teaching).

7 .5 Should either Party wish to abandon a property right, it shall first offer such right to the other Party in return for an appropriate consideration; should the other Party accept the property right offered, it shall acquire unrestricted title thereto. In this case, the party assuming the right shall also be responsible for payment of the accruing inventor's compensation.

§8
TERM OF AGREEMENT

8.1 The term of this Agreement shall become effective on January 1st 2019 and continue into effect until submission of the final report within the meaning of Section 3.2.

8.2 Neither Partner may terminate this Agreement prior to the end of term except for good cause.

§9
FINAL PROVISIONS

9.1 The relationship between the Parties with respect to the subject matter of this Agreement is regulated in full by the text of this Agreement.

9.2 The Parties shall be liable to one another only with respect to willful intent and gross negligence.

9.3 No termination, amendment, supplement or cancellation of this Agreement shall be effective unless made in writing.

9.4 In the event that one or more terms of the Agreement are or become invalid, the Parties shall be obliged to replace the invalid terms with other valid provisions which so closely approach the invalid terms as to permit of a reasonable presumption that the parties might also have entered into the Agreement had it originally contained this clause.

9.5 Should it not be possible to arrive at such a provision, the fact that one or more terms of the Agreement are invalid shall not affect the validity of the Agreement as a whole, unless the invalid terms are of such material importance to the Agreement that it may reasonably be presumed that the Parties would not have entered into the Agreement had it not contained the invalid terms.

9.6 The Appendices to this Agreement shall form an integral part of this Agreement.

9.7 This Agreement shall be governed by the laws of the Federal Republic of Germany.

MISP Research Center- Isfahan
Dr. Hossein Rabbani

Date:
Jan 13, 2019

Charité - Universitätsmedizin Berlin
Anne Großkopff

Date:
14 FEB. 2019

R 11.2.19

Read and Acknowledged:

Rahele Kafieh/Project Manager of MISP Charité

Rahele Kafieh

Date:

2019.01.13

Read and Acknowledged:

Alexander Brandt/Project Manager of

Date: 30.01.2019

Appendix 1 - Research Project

Using deep learning for diagnosing multiple sclerosis, neuromyelitis optica and related disorders in Iran and Germany, specifically

- Intraretinal segmentation of 3D macular scans using deep learning based approaches.

Appendix 2 – Research Programme

Charité:

- Generation of training and validation datasets for deep learning purposes from retinal optical coherence tomography (OCT) of healthy controls and patients with multiple sclerosis, neuromyelitis optica and related disorders from Germany.
- Gold standard intraretinal segmentation of OCT images
- Providing CPU/GPU capacity for model training

MISP:

- Generation of training and validation datasets for deep learning purposes from retinal optical coherence tomography (OCT) of healthy controls and patients with multiple sclerosis, neuromyelitis optica and related disorders from Iran.
- Design of deep learning models

Together:

- Training and validation of generated models
- Statistical analysis
- Publication of the results of the collaborative project