

Title (en)
THEORY-MOTIVATED DOMAIN CONTROL FOR OPHTHALMOLOGICAL MACHINE LEARNING-BASED PREDICTION METHOD

Title (de)
THEORIE-MOTIVIERTE DOMÄNENKONTROLLE FÜR OPHTHALMOLOGISCHE MACHINE-LEARNING-BASIERTE VORHERSAGEMETHODE

Title (fr)
COMMANDE DE DOMAINE MOTIVÉE PAR LA THÉORIE POUR UN PROCÉDÉ DE PRÉDICTION BASÉ SUR UN APPRENTISSAGE AUTOMATIQUE OPHTALMOLOGIQUE

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Application
EP 22708353 A 20220126

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Abstract (en)
[origin: WO2022162013A1] The invention relates to a computer-implemented method for determining the refractive power of an intraocular lens to be inserted. The method comprises providing a physical model for determining refractive power and training a machine learning system with clinical ophthalmological training data and associated desired results to form a learning model for determining the refractive power. A loss function for training two components comprises: a first component of the loss function takes into account clinical ophthalmological training data and associated and desired results and a second component of the loss function takes into account limitations of the physical model in that a loss function component value of this second component is greater the further a predicted value of the refractive power during the training is from results of the physical model with the same clinical ophthalmological training data as input values. Moreover, the method comprises providing ophthalmological data of a patient and predicting the refractive power of the intraocular lens to be used by means of the trained machine learning system, wherein the provided ophthalmological data are used as input data.

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