

Hrvoje Bogunović

Curriculum Vitae

Research Output

Author of 125 peer-reviewed papers (91 journals, 39 conferences) out of which 63 as First/Last-Author (31 journals, 22 conferences). In addition, editor of 2 book proceedings and author of 5 book chapters.

ORCID <https://orcid.org/0000-0002-9168-0894>

Google Scholar <https://scholar.google.com/citations?user=0pPVZz4AAAAJ>

h-index = 38, i10-index = 86, citations \approx 6600

Education

Nov. 2021 **Habilitation (venia docendi) in Medical Informatics.**

2007–2012 **PhD (cum laude)**, *Center for Computational Imaging & Simulation Technologies in Biomedicine - Universitat Pompeu Fabra, Barcelona, Spain.*

Thesis *Geometric Modeling and Characterization of the Circle of Willis*

Supervisor Prof. Alejandro F. Frangi

2001–2005 **MSc (Mag.) in Computing**, *Faculty of Electrical Engineering and Computing - University of Zagreb, Zagreb, Croatia.*

Thesis *Blood Flow Analysis from Angiogram Image Sequence*

Supervisor Prof. Sven Lončarić

1996–2001 **BSc (Dipl.-Ing.) in Computing**, *Faculty of Electrical Engineering and Computing - University of Zagreb, Zagreb, Croatia.*

Thesis *Motion Estimation and Segmentation from Image Sequence*

Supervisor Prof. Sven Lončarić

Positions/Work Experience

Since 2024 **Assistant Professor**, *AI Institute, Center for Medical Data Science - Medical University of Vienna, Vienna, Austria.*

2021-2024 **Außerplanmäßiger Professor (Ap.Prof.)**, *Department of Ophthalmology - Medical University of Vienna, Vienna, Austria.*

2018-2021 **Entwicklungsvereinbarung (EKV)**, *Department of Ophthalmology - Medical University of Vienna, Vienna, Austria.*

- 2015–2018 **Senior Postdoctoral Researcher**, *Department of Ophthalmology - Medical University of Vienna, Vienna, Austria.*
- 2012–2015 **Postdoctoral Research Scholar**, *The Iowa Institute for Biomedical Imaging and Department of Electrical and Computer Engineering - The University of Iowa, Iowa City, IA, US.*
- 2007–2012 **Research and Teaching Assistant**, *Center for Computational Imaging and Simulation Technologies in Biomedicine - Universitat Pompeu Fabra, Barcelona, Spain.*
- 2002–2006 **Research and Teaching Assistant**, *Faculty of Electrical Engineering and Computing - University of Zagreb, Zagreb, Croatia.*

Awards

- 2023 **Best poster award at OMIA-MICCAI workshop (senior-author)**, *Pre-trained deep 2.5D models for efficient predictive modeling from retinal OCT.*
- 2019 **Best paper award at PRIME-MICCAI workshop (senior-author)**, *Modeling disease progression in retinal OCTs with longitudinal self-supervised learning.*
- 2019 **Best poster award at OMIA-MICCAI workshop (senior-author)**, *U-Net with spatial pyramid pooling for drusen segmentation in optical coherence tomography.*
- 2017 **ARVO press conference selection**, *Personalized prognosis in intermediate AMD based on drusen regression, top 3 out of \approx 6000 abstracts.*
- 2011 **Best poster award at Summer School on Graphs in Computer Graphics, Image and Signal Analysis**, Bornholm, Denmark.
- 2011 **Travel grant from MICCAI society.**
- 2009 **Predoctoral Fellowship Award**, *AGAUR, the government of Catalonia, Spain.*
- 2001 **Undergraduate Fellowship Award**, *The city of Zagreb, Croatia, 5% acceptance rate.*

Funding

- 2024–2028 **I(eye)-SCREEN: A real-world AI-based infrastructure for screening and prediction of progression in age-related macular degeneration (AMD) providing accessible shared care**, *HORIZON-EIC-PATHFINDER, €1.3M, WP Leader. Project ranked #2 out of 783 submitted.*
- 2023–2027 **Retinomics for precision profiling of coronary heart disease risk**, *Vienna Science and Technology Fund (WWTF), €500k, Co-Principal Investigator.*
- 2022–2024 **AI-based analysis of DERBY & OAKS phase 3 clinical trials**, *unrestricted research grant from Apellis, Inc., €113k, Principal Investigator.*
- 2021–2026 **AI-Based Retinal Image Analysis Research Group**, *Austrian Science Fund (FWF), €364k, Principal Investigator. 10% acceptance rate.*
- 2021–2027 **Christian Doppler Lab for Artificial Intelligence in Retina**, *Christian Doppler Research Association, €4.083k, Principal Investigator.*
- 2020–2021 **AI-based analysis of FILLY phase 2 clinical trial**, *unrestricted research grant from Apellis, Inc., €183k, Principal Investigator.*

- 2019-2024 **Digitise AMD: An advanced analysis of the pathophysiology of AMD by multi-modal imaging and machine learning (PINNACLE)**, *Wellcome Trust*, €940k, Co-Principal Investigator.
- 2017-2019 **Personalized risk prognosis for the development of advanced age-related macular degeneration**, *unrestricted research grant from Bayer, AG*, €380k, Co-Investigator.

Project Participation

Research

- 2015-2019 **Christian Doppler Laboratory for Ophthalmic Image Analysis**, *Funded by Christian Doppler Research Association*, PI: Prof. Ursula Schmidt-Erfurth.
- 2013-2015 **Retinal Therapy Guided by 3-D OCT Image Analysis**, *Funded by National Institutes of Health (NIH)*, (R01 EY019112), PI: Prof. Michael Abramoff and Prof. Milan Sonka.
- 2013-2015 **Three-Dimensional Structure-Function Relationships in Glaucoma from SD-OCT**, *Funded by National Institutes of Health (NIH)*, (R01 EY018853), PI: Prof. Milan Sonka.
- 2013-2015 **Graph-based Medical Image Segmentation in 3D and 4D**, *Funded by National Institutes of Health (NIH)*, (R01 EB004640), PI: Prof. Milan Sonka.
- 2009-2012 **Technologies for the Integral Management of Cardiovascular Remodeling (cvREMOD)**, *Funded by Spanish Ministry of Science and Innovation*, (CDTI CEN20091044), PI: Prof. Alejandro F. Frangi.
- 2007-2010 **@neurIST - Integrated Biomedical Informatics for the Management of Cerebral Aneurysms**, *Funded by European Commission*, (FP6 IST-027703), PI: Prof. Alejandro F. Frangi.

Industrial innovation

- 2008-2012 **Technologies in Aneurysm Management (TEAM)**, *Funded by Philips Healthcare*, PI: Prof. Alejandro F. Frangi.
- 2004-2006 **Guidewire Tip Tracking in Fluoroscopy**, *Funded by Philips Healthcare*, PI: Prof. Sven Lončarić.
- 2003-2006 **Functional X-ray Angio Imaging**, *Funded by Philips Healthcare*, PI: Prof. Sven Lončarić.

Invited Presentations

- 2023 *The Promise and Peril of Artificial Intelligence in the Management of Patients with AMD*, UCL Institute of Ophthalmology Seminar Series, May 24, UK
- 2022 *The role of Artificial Intelligence in the management of patients with AMD*, 2nd Suzhou International Summit Forum on Artificial Intelligence in Ophthalmology, Nov 26, China
- 2022 *The role of AI in the management of patients with neovascular AMD*, Taiwan Macula Society Annual Meet, Sep 18, Taiwan

- 2022 *Reliability and trustworthiness of automated image segmentation algorithms*, 22nd EURETINA Congress, Sep 2, Hamburg, Germany
- 2022 *AI in Ophthalmology*, TUM Workshop on AI for Doctors: Medical Imaging, June 25th, Munich, Germany
- 2022 *Artificial Intelligence Analyses of FILLY Phase 2 Trial*, GA Days, April 9th, Barcelona, Spain
- 2021 *Geographic Atrophy and Artificial Intelligence: Disease activity and prediction of progression*, FLORetina - 9th International Congress on OCT and OCT angiography, Dec 18, Rome, Italy
- 2021 *AI in daily clinical practice*, Retinale 2021, Oct 23, Virtual
- 2021 *AI and Geographic Atrophy*, Instructional Course: "Artificial Intelligence In The Real World" at 21st EURETINA Congress, Sep 12th, Virtual
- 2021 *How can AI help us and our patients?*, Symposium: "The Ophthalmology Clinic of 2030: What is on the Horizon?" at 21st EURETINA Congress, Sep 10, Virtual
- 2021 *Deep Learning in Ophthalmology*, 29th Summer School on Image Processing (SSIP), July 12, Rijeka, Croatia
- 2021 *The role of AI in screening and early diagnosis of nAMD*, Global Retinal Network Program (GRNP), June 12, Virtual
- 2020 *Retinal OCT Analysis and Prediction with Deep Learning*, OSA Biophotonics Congress: Biomedical Optics, April 22nd, 2020, Virtual
- 2019 *Breaking the black box: a responsible innovation of artificial intelligence*, 7th International Congress on OCT Angiography and Advances in OCT, Dec 14th, 2019, Rome, Italy
- 2019 *Deep Learning for Ophthalmology*, Lecture Series Artificial Intelligence at Johannes Kepler University (JKU), Nov 12th, 2019, Linz, Austria
- 2019 *Deep learning for predicting AMD outcomes from OCT*, 117th DOG-Kongress, Sep 28th, 2019, Berlin, Germany
- 2019 *AI for personalized therapy and prognosis*, 19th EURETINA Congress, Sep 7th, 2019, Paris, France
- 2018 *Fluid and function – an analysis by AI*, 6th International Congress on OCT Angiography and Advances in OCT, Dec 15th, 2018, Rome, Italy
- 2018 *Personalized prognosis of AMD based on deep learning of OCT biomarkers*, 116th DOG-Kongress, Sep 30th, 2018, Bonn, Germany
- 2018 *What can machine learning do for the clinicians?*, 18th EURETINA Congress, Sep 22nd, 2018, Vienna, Austria
- 2017 *Prediction of Individual Progression of AMD using Machine Learning*, 3rd International Retina Council, Sep 2nd, 2017, Münster, Germany
- 2016 *Future of Optical Coherence Tomography Research*, 29th International Conference of German Ophthalmic Surgeons (DOC), June 10th, 2016, Nuremberg, Germany
- 2015 *State-of-the-Art in Automated Feature Detection in Retinal OCT*, 33rd Annual Meeting of American Society of Retinal Specialists (ASRS), July 12th, 2015, Vienna, Austria

- 2014 *Vascular segmentation and geometric characterization*, 22nd Summer School on Image Processing (SSIP), July 9-18, 2014, Zagreb, Croatia
- 2012 *Geometric modeling and characterization of the circle of Willis*, 1st Croatian Computer Vision Workshop (CCVW), September 20-21, 2012, Zagreb, Croatia

Supervision

- 2022–Now José Morano - PhD student in Medical Imaging, Medical University of Vienna
- 2022–Now Marzieh Oghbaie - PhD student in Medical Imaging, Medical University of Vienna
- 2021–Now Taha Emre - PhD student in Medical Imaging, Medical University of Vienna
- 2021–Now Hana Jebri - PhD student in Medical Imaging, Medical University of Vienna
- 2021–Now Botond Fazekas - PhD student in Medical Imaging, Medical University of Vienna
- 2019–Now Dmitry Lachinov - PhD student in Medical Imaging, Medical University of Vienna
- 2018–Now Antoine Rivail - PhD student in Medical Imaging, Medical University of Vienna
- 2017–2020 Fatemeh Asgari - PhD student in Medical Imaging, Medical University of Vienna
- 2022–Now Emese Sükei - PostDoc at Medical University of Vienna
- 2021–Now Guilherme Aresta - PostDoc at Medical University of Vienna
- 2021–Now Teresa Araújo - PostDoc at Medical University of Vienna
- 2020–Now Arunava Chakravarty - PostDoc at Medical University of Vienna
- 2018–2019 David Romo Bucheli - PostDoc at Medical University of Vienna
- 2018–2019 José Ignacio Orlando - PostDoc at Medical University of Vienna

Academic Service

Editorial board member

- 2022–Now **Elsevier Medical Image Analysis**
- 2021–Now **IEEE Transactions on Medical Imaging**
- 2019–Now ARVO Translational Vision Science & Technology
- 2019–2021 Nature Scientific Reports

Program committee member

- 2020–2022 **Medical Image Computing and Computer Assisted Intervention (MICCAI)**, *Area Chair*
- 2019 **Medical Imaging with Deep Learning (MIDL)**, *Area Chair*
- 2013–2023 Croatian Computer Vision Workshop
- 2019–2021 Workshop on Interpretability of Machine Intelligence in Medical Image Computing at MICCAI (iMIMIC)
- 2019 International Conference on Image Analysis and Recognition (ICIAR)
- 2018 Novel Imaging Methods for Diagnosis and Screening of Ophthalmic Diseases - Special Session of ICIAR

Organization of scientific events

- 2019 **Angle-closure Glaucoma Evaluation Challenge (AGE)**, *MICCAI satellite event*, Shenzhen, China, co-organizer.
- 2019 **Pathologic Myopia Challenge (PALM)**, *ISBI satellite event*, Venice, Italy, co-organizer.
- 2018 **Retinal Fundus Glaucoma Challenge (REFUGE)**, *MICCAI satellite event*, Granada, Spain, co-organizer.
- 2018 **5th Workshop on Ophthalmic Medical Image Analysis (OMIA)**, *MICCAI satellite event*, Granada, Spain, co-organizer.
- 2017 **Retinal OCT Fluid Segmentation Challenge (RETOUCH)**, *MICCAI satellite event*, Quebec City, Canada, principal-organizer.
- 2017 **4th Workshop on Ophthalmic Medical Image Analysis (OMIA)**, *MICCAI satellite event*, Quebec City, Canada, co-organizer.

Reviewer

- Journals IEEE Transactions on Medical Imaging, Elsevier Medical Image Analysis, Lancet Digital Health, Nature Scientific Reports, Elsevier Artificial Intelligence in Medicine, Ophthalmology Retina, PLoS One, BMC Medicine, Investigative Ophthalmology and Visual Science, British Journal of Ophthalmology
- Conferences MICCAI, MIDL, ICIAR
- Grants Swiss National Science Foundation (SNSF), The Dutch Research Council (NWO), German Research Foundation (DFG), Cariplo Foundation

Teaching

Lecturer

- 2018–Now **Advanced Multimodal Retinal Imaging**, *Medical University of Vienna*, co-lecturer, graduate course.
- 2017–Now **Computational Image Analysis Techniques**, *Medical University of Vienna*, co-lecturer, graduate course.
- 2017–Now **Image Processing and Analysis**, *University of Vienna*, co-lecturer, undergraduate course.
- 2017–2019 **Signal and Image Processing**, *University of Vienna*, co-lecturer, undergraduate course.

Teaching assistant

- 2011–2012 **Fundamentals of Computer Programming**, *Universitat Pompeu Fabra, Spain*, Laboratory.
- 2011–2012 **Signals and Systems**, *Universitat Pompeu Fabra, Spain*, Seminars.
- 2007–2008 **Data Coding and Transmission**, *Universitat Pompeu Fabra, Spain*, Seminars.
- 2004–2005 **Signals and Systems**, *University of Zagreb, Croatia*, Laboratory.
- 2003–2006 **Artificial Neural Networks**, *University of Zagreb, Croatia*, Laboratory.
- 2002–2006 **Software Design for Measurement and Control Systems**, *University of Zagreb, Croatia*, Laboratory.

Hrvoje Bogunović - List of Publications

Journal articles (Q1 journals in bold)

- 91 T. Emre, A. Chakravarty, A. Rivail, D. Lachninov, O. Leingang, S. Riedl, J. Mai, H. P. N. Scholl, S. Sivaprasad, D. Rueckert, A. Lotery, U. Schmidt-Erfurth, **H. Bogunović**: “3DTINC: Time-Equivariant Non-Contrastive Learning for Predicting Disease Progression from Longitudinal OCTs”, ***IEEE Transactions on Medical Imaging***, In Press, 2024
- 90 A. Chakravarty, T. Emre, O. Leingang, S. Riedl, J. Mai, H. P. N. Scholl, S. Sivaprasad, D. Rueckert, A. Lotery, U. Schmidt-Erfurth, **H. Bogunović**: “Morph-SSL: Self-Supervision with Longitudinal Morphing for Forecasting AMD Progression from OCT Volumes”, ***IEEE Transactions on Medical Imaging***, In Press, 2024
- 89 H. Fang, F. Li, J. Wu, H. Fu, X. Sun, J.I. Orlando, **H. Bogunović**, X. Zhang, Y. Xu: “Open Fundus Photograph Dataset with Pathologic Myopia Recognition and Anatomical Structure Annotation”, ***Scientific Data***, vol. 11:99, 2024
- 88 G. Aresta, T. Araújo, B. Fazekas, J. Mai, U. Schmidt-Erfurth, **H. Bogunović**: “Interactive Deep Learning-Based Retinal OCT Layer Segmentation Refinement by Regressing Translation Maps”, ***IEEE Access***, vol. 12, pp. 47009 - 47023, 2024
- 87 P. Seeböck, J.I. Orlando, M. Michl, J. Mai, U. Schmidt-Erfurth, **H. Bogunović**: “Anomaly Guided Segmentation: Introducing Semantic Context for Lesion Segmentation in Retinal OCT using Weak Context Supervision from Anomaly Detection”, ***Medical Image Analysis***, vol. 93:103104, 2024
- 86 J. Morano, G. Aresta, C. Grechenig, U. Schmidt-Erfurth, **H. Bogunović**: “Deep Multimodal Fusion of Data with Heterogeneous Dimensionality via Projective Networks”, ***IEEE Journal of Biomedical and Health Informatics***, vol. 28(4), pp. 2235-2246, 2024
- 85 J. Mai, D. Lachinov, G.S. Reiter, S. Riedl, C. Grechenig, **H. Bogunović**, U. Schmidt-Erfurth: “Deep learning-based prediction of individual geographic atrophy progression from a single baseline OCT”, ***Ophthalmology Science***, vol. 4(4):100466, 2024
- 84 D. Lachinov, A. Chakravarty, C. Grechenig, U. Schmidt-Erfurth, **H. Bogunović**: “Learning Spatio-Temporal Model of Disease Progression with NeuralODEs from Longitudinal Volumetric Data”, ***IEEE Transactions on Medical Imaging***, 43(3), pp. 1165-1179, 2024
- 83 C. de Vente, K. A. Vermeer, N. Jaccard, H. Wang, H. Sun, F. Khader, D. Truhn, T. Aimyshev, Y. Zhanibekuly, T.-D. Le, A. Galdran, M. A. Gonzalez-Ballester, G. Carneiro, D. R G, H. P S, D. Puthussery, H. Liu, Z. Yang, S. Kondo, S. Kasai, E. Wang, A. Durvasula, J. Heras, M. A. Zapata, T. Araújo, G. Aresta, **H. Bogunović**, M. Arikani, Y. C. Lee, H. B. Cho, Y. H. Choi, A. Qayyum, I. Razzak, B. van Ginneken, H. G. Lemij, C. I. Sánchez: “AIROGS: Artificial Intelligence for ROBust Glaucoma Screening Challenge”, ***IEEE Transactions on Medical Imaging***, vol. 43(1), pp. 542-557, 2024

- 82 J. Wu, H. Fang, F. Li, H. Fu, F. Lin, J. Li, Y. Huang, Q. Yu, S. Song, X. Xu, Y. Xu, W. Wang, L. Wang, S. Lu, H. Li, S. Huang, Z. Lu, C. Ou, X. Wei, B. Liu, R. Kobbi, X. Tang, L. Lin, Q. Zhou, Q. Hu, **H. Bogunović**, J.I. Orlando, X. Zhang, Y. Xu: "GAMMA challenge: Glaucoma grading from Multi-Modality images", *Medical Image Analysis*, vol. 90:102938, 2023
- 81 O. Leingang, S. Riedl, J. Mai, G. S. Reiter, G. Faustmann, P. Fuchs, H. P. N. Scholl, S. Sivaprasad, D. Rueckert, A. Lotery, U. Schmidt-Erfurth, **H. Bogunović**: "Automated deep learning-based AMD detection and staging in real-world OCT datasets", *Scientific Reports*, vol. 13:19545, 2023
- 80 T. Araújo, G. Aresta, U. Schmidt-Erfurth, **H. Bogunović**: "Few-shot Out-of-Distribution Detection for Automated Screening in Retinal OCT Images using Deep Learning", *Scientific Reports*, vol. 13:16231, 2023
- 79 V. Mares, U. Schmidt-Erfurth, O. Leingang, P. Fuchs, M. B. Nehemy, **H. Bogunović**, D. Barthelmes, G. S. Reiter: "Approved AI-based fluid monitoring to identify morphological and functional treatment outcomes in neovascular age-related macular degeneration in real-world routine (FRB!)", *British Journal of Ophthalmology*, In Press, 2023.
- 78 P. Anders, G. L. Traber, M. Pfau, S. Riedl, A. M. Hagag, H. Camenzind, J. Mai, R. Kaye, **H. Bogunović**, L. G. Fritsche, D. Rueckert, U. Schmidt-Erfurth, S. Sivaprasad, A. J. Lotery, H. P. N. Scholl: "Comparison of Novel Volumetric Microperimetry Metrics in Intermediate Age-Related Macular Degeneration: PINNACLE Study Report 3", *Translational Vision Science & Technology*, vol. 12(8):21, 2023
- 77 J. Mai, D. Lachinov, S. Riedl, G. S. Reiter, W.-D. Vogl, **H. Bogunović**, U. Schmidt-Erfurth: "Clinical validation for automated geographic atrophy monitoring on OCT under complement inhibitory treatment", *Scientific Reports*, vol. 13:7028, 2023.
- 76 D. Rivas-Villar, A. R. Motschi, M. Pircher, C. K. Hitzenberger, M. Schranz, P. K. Roberts, U. Schmidt-Erfurth, and **H. Bogunović**: "Automated inter-device 3D OCT image registration using deep learning and retinal layer segmentation". *Biomedical Optics Express*, vol. 14(7), pp. 3726-3747, 2023.
- 75 M. Pawloff, B. S. Gerendas, G. Deak, **H. Bogunović**, A. Gruber, U. Schmidt-Erfurth: "Performance of retinal fluid monitoring in OCT imaging by automated deep learning versus human expert grading in neovascular AMD", *Eye*, vol. 37, pp. 3793–3800 2023.
- 74 L. M. Coulibaly, G. S. Reiter, P. Fuchs, D. Lachinov, O. Leingang, W.-D. Vogl, **H. Bogunović**, U. Schmidt-Erfurth: "Progression Dynamics of Early versus Later Stage Atrophic Lesions in Nonneovascular Age-Related Macular Degeneration Using Quantitative OCT Biomarker Segmentation", *Ophthalmology Retina*, vol. 7(9), pp. 762-770, 2023.
- 73 A. Rivail, W.-D. Vogl, S. Riedl, C. Grechenig, L. M. Coulibaly, G. S. Reiter, R. H. Guymer, Z. Wu, , U. Schmidt-Erfurth, and **H. Bogunović**: "Deep survival modeling of longitudinal retinal OCT volumes for predicting the onset of atrophy in patients with intermediate AMD". *Biomedical Optics Express*, vol. 14(6), pp. 2449-2464, 2023.

- 72 A. R. Motschi, F. Schwarzzhans, S. Desissaire, S. Steiner, **H. Bogunović**, P. K. Roberts, C. Vass, C. K. Hitzenberger, M. Pircher: "Characteristics of Henle's fiber layer in healthy and glaucoma eyes assessed by polarization-sensitive optical coherence tomography". *Biomedical Optics Express*, vol. 14(6), pp. 2709-2725, 2023.
- 71 M. J. Menten, R. Holland, O. Leingang, **H. Bogunović**, A. M. Hagag, R. Kaye, S. Riedl, G. L. Traber, O. N. Hassan, N. Pawlowski, B. Glocker, L. G. Fritsche, H. P.N. Scholl, S. Sivaprasad, U. Schmidt-Erfurth, D. Rueckert, A. J. Lotery: "Exploring Healthy Retinal Aging with Deep Learning". *Ophthalmology Science*, vol. 3(3):100294, 2023.
- 70 G. S. Reiter, **H. Bogunović**, F. Schlanitz, W.-D. Vogl, P. Seeböck, D. Ramazanov, U. Schmidt-Erfurth "Point-to-point associations of drusen and hyperreflective foci volumes with retinal sensitivity in non-exudative age-related macular degeneration". *Eye*, vol. 37, pp. 3582–3588, 2023.
- 69 U. Schmidt-Erfurth, J. Mai, G. S. Reiter, S. Riedl, D. Lachinov, W.-D. Vogl, **H. Bogunović**: "Monitoring of the progression of geographic atrophy with optical coherence tomography". *Die Ophthalmologie*, vol. 120, pp. 965–969, 2023.
- 68 B. Fazekas, D. Lachinov, G. Aresta, J. Mai, U. Schmidt-Erfurth, **H. Bogunović**: "Segmentation of Bruch's Membrane in retinal OCT with AMD using anatomical priors and uncertainty quantification". *IEEE Journal of Biomedical and Health Informatics*, vol. 27(1), pp. 41-52, 2023.
- 67 W-D. Vogl, S. Riedl, J. Mai, D. Lachinov, **H. Bogunović**, U. Schmidt-Erfurth: "Predicting Topographic Disease Progression and Treatment Response of Pegcetacoplan in Geographic Atrophy Quantified by Deep Learning". *Ophthalmology Retina*, vol. 7(1), pp. 4-13, 2023.
- 66 L. M. Coulibaly, S. Sacu, P. Fuchs, **H. Bogunović**, G. Faustmann, C. Unterriener, G. S. Reiter, U. Schmidt-Erfurth: "Personalized treatment supported by automated quantitative fluid analysis in active neovascular age-related macular degeneration (nAMD) - a phase III, prospective, multicentre, randomized study: design and methods". *Eye*, vol. 37(7), pp. 1464-1469, 2023.
- 65 J. Sutton, M. J. Menten, S. Riedl, **H. Bogunović**, O. Leingang, P. Anders, A. M. Hagag, S. Waldstein, A. Wilson, A. J. Cree, G. Traber, L. G. Fritsche, H. Scholl, D. Rueckert, U. Schmidt-Erfurth, S. Sivaprasad, T. Prevost, A. Lotery: "Developing and validating a multivariable prediction model which predicts progression of intermediate to late age-related macular degeneration—the PINNACLE trial protocol". *Eye*, vol. 37(6), pp. 1275-1283, 2023.
- 64 U. Schmidt-Erfurth, Z. Mulyukov, B.S. Gerendas, G.S. Reiter, D. Lorand, G. Weissgerber, **H. Bogunović**: "Therapeutic response in the HAWK and HARRIER trials using deep learning in retinal fluid volume and compartment analysis". *Eye*, vol. 37(6):1160-1169, 2023.
- 63 M. Schranz, R. Told, V. Hacker, G. S. Reiter, A. Reumueller, W-D. Vogl, **H. Bogunović**, S. Sacu, U. Schmidt-Erfurth, P. K. Roberts: "Correlation of vascular and fluid-related parameters in neovascular age-related macular degeneration using deep learning". *Acta Ophthalmologica*, vol. 101(1), pp. e95-e105, 2023.

- 62 A.R. Motschi, F. Schwarzhans, S. Desissaire, S. Steiner, **H. Bogunović**, P. K. Roberts, C. Vass, C. K. Hitzengerger, M. Pircher: "Quantitative assessment of depolarization by the retinal pigment epithelium in healthy and glaucoma subjects measured over a large field of view", *PLoS One*, vol. 17(12), Article: e0278679, 2022.
- 61 J. Mai, S. Riedl, G.S.Reiter, D. Lachinov, W-D Vogl, **H. Bogunović**, U. Schmidt-Erfurth: "Comparison of Fundus Autofluorescence Versus Optical Coherence Tomography-based Evaluation of the Therapeutic Response to Pegcetacoplan in Geographic Atrophy". *Americal Journal of Ophthalmology*, vol. 244, pp. 175-182, 2022.
- 60 B. S. Gerendas, A. Sadeghipour, M. Michl, F. Goldbach, G. Mylonas, A. Gruber, T. Alten, O. Leingang, S. Sacu, **H. Bogunović**, U. Schmidt-Erfurth: "Validation of an automated fluid algorithm on real-world data of neovascular age-related macular degeneration over five years". *RETINA*, vol. 42(9), pp. 1673-1682, 2022.
- 59 **H. Bogunović**, V. Mares, G. S. Reiter, U. Schmidt-Erfurth: "Predicting treat-and-extend outcomes and treatment intervals in neovascular age-related macular degeneration from retinal optical coherence tomography using artificial intelligence". *Frontiers in Medicine*, vol. 9, Article: 958469, 2022.
- 58 S. Riedl, W.-D. Vogl, J. Mai, G. S. Reiter, D. Lachinov, C. Grechenig, A. McKeown, L. Scheibler, **H. Bogunović**, U. Schmidt-Erfurth: "The effect of pegcetacoplan treatment on photoreceptor maintenance in geographic atrophy monitored by AI-based OCT analysis". *Ophthalmology Retina*, vol. 6(11), pp. 1009-1018, 2022.
- 57 S. Schurer-Waldheim, P. Seeböck, **H. Bogunović**, B. S. Gerendas, U. Schmidt-Erfurth: "Robust Fovea Detection in Retinal OCT Imaging using Deep Learning". *IEEE Journal of Biomedical and Health Informatics*, vol. 26(8), pp. 3927-3937, 2022.
- 56 H. Fang, F. Li, H. Fu, X. Sun, X. Cao, F. Lin, J. Son, S. Kim, G. Quelled, S. Matta, S. M. Shankaranarayana, Y.-T. Chen, C.-H. Wang, N. A. Shah, C.-Y. Lee, C.-C. Hsu, H. Xie, B. Lei, U. Baid, S. Innani, K. Dang, W. Shi, R. Kamble, N. Singhal, C.-W. Wang, S.-C. Lo, J. I. Orlando, **H. Bogunović**, X. Zhang, Y. Xu, iChallenge-AMD Study Group: "ADAM Challenge: Detecting Age-related Macular Degeneration from Fundus Images". *IEEE Transactions on Medical Imaging*, vol. 41(10), pp. 2828-2847, 2022
- 55 P. Seeböck, W.-D. Vogl, S. M. Waldstein, J. I. Orlando, M. Baratsits, T. Alten, M. Arikan, G. Mylonas, **H. Bogunović**, U. Schmidt-Erfurth: "Linking Function and Structure with ReSenseNet: Predicting Retinal Sensitivity from Optical Coherence Tomography using Deep Learning". *Ophthalmology Retina*, vol. 6(6), pp. 501-511, 2022.
- 54 S. Riedl, W-D. Vogl, S. M. Waldstein, U. Schmidt-Erfurth, **H. Bogunović**: "Impact of intra- and subretinal fluid on vision based on volume quantification in the HARBOR trial". *Ophthalmology Retina*, vol. 6(4), pp. 291-297, 2022.
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