

- [39] S. Roychowdhury, D. D. Koozekanani, S. N. Kuchinka, and K. K. Parhi, "Optic disc boundary and vessel origin segmentation of fundus images," *IEEE J Biomed Health Inform*, vol. 20, no. 6, pp. 1562–1574, Nov. 2016, doi: 10.1109/JBHI.2015.2473159.
- [40] E. Decencière *et al.*, "Feedback on a publicly distributed image database: The Messidor database," *Image Analysis and Stereology*, vol. 33, no. 3, pp. 231–234, 2014, doi: 10.5566/IAS.1155.
- [41] J. Sivaswamy, A. Chakravarty, G. D. Joshi, and T. A. Syed, "A Comprehensive Retinal Image Dataset for the Assessment of Glaucoma from the Optic Nerve Head Analysis," 2015.
- [42] P. Porwal *et al.*, "IDRiD: Diabetic Retinopathy – Segmentation and Grading Challenge," *Med Image Anal*, vol. 59, Jan. 2020, doi: 10.1016/J.MEDIA.2019.101561.
- [43] M. Alawad *et al.*, "Machine Learning and Deep Learning Techniques for Optic Disc and Cup Segmentation – A Review," *Clinical Ophthalmology*, vol. 16, pp. 747–764, 2022, doi: 10.2147/OPHTH.S348479.
- [44] W. L. Alyoubi, W. M. Shalash, and M. F. Abulkhair, "Diabetic retinopathy detection through deep learning techniques: A review," *Inform Med Unlocked*, vol. 20, p. 100377, Jan. 2020, doi: 10.1016/J.IMU.2020.100377.
- [45] C. P. Wilkinson *et al.*, "Proposed international clinical diabetic retinopathy and diabetic macular edema disease severity scales," *Ophthalmology*, vol. 110, no. 9, pp. 1677–1682, Sep. 2003, doi: 10.1016/S0161-6420(03)00475-5.
- [46] M. Esfahani, M. G.-L. Electron. J., and undefined 2018, "Classification of diabetic and normal fundus images using new deep learning method," *lejpt.academicdirect.org*, Accessed: May 01, 2023. [Online]. Available: http://lejpt.academicdirect.org/A32/get_htm.php?htm=233_248
- [47] G. Quellec, K. Charrière, Y. Boudi, B. Cochener, and M. Lamard, "Deep image mining for diabetic retinopathy screening," *Med Image Anal*, vol. 39, pp. 178–193, Jul. 2017, doi: 10.1016/J.MEDIA.2017.04.012.
- [48] K. Xu, D. Feng, and H. Mi, "Deep Convolutional Neural Network-Based Early Automated Detection of Diabetic Retinopathy Using Fundus Image," *Molecules* 2017, Vol. 22, Page 2054, vol. 22, no. 12, p. 2054, Nov. 2017, doi: 10.3390/MOLECULES22122054.
- [49] M. D. Abramoff *et al.*, "Improved Automated Detection of Diabetic Retinopathy on a Publicly Available Dataset Through Integration of Deep Learning," *Invest Ophthalmol Vis Sci*, vol. 57, no. 13, pp. 5200–5206, Oct. 2016, doi: 10.1167/IOVS.16-19964.
- [50] S. Dutta *et al.*, "Classification of Diabetic Retinopathy Images by Using Deep Learning Models Mathematical Modeling View project Predictive Analytics View project Classification of Diabetic Retinopathy Images by Using Deep Learning Models," *International Journal of Grid and Distributed Computing*, vol. 11, no. 1, pp. 89–106, 2018, doi: 10.14257/ijgcd.2018.11.1.09.
- [51] V. Gulshan *et al.*, "Development and Validation of a Deep Learning Algorithm for Detection of Diabetic Retinopathy in Retinal Fundus Photographs," *JAMA*, vol. 316, no. 22, pp. 2402–2410, Dec. 2016, doi: 10.1001/JAMA.2016.17216.
- [52] H. Pratt, F. Coenen, D. M. Broadbent, S. P. Harding, and Y. Zheng, "Convolutional Neural Networks for Diabetic Retinopathy," *Procedia Comput Sci*, vol. 90, pp. 200–205, Jan. 2016, doi: 10.1016/J.PROCS.2016.07.014.
- [53] X. Wang, Y. Lu, Y. Wang, and W. B. Chen, "Diabetic retinopathy stage classification using convolutional neural networks," *Proceedings - 2018 IEEE 19th International Conference on Information Reuse and Integration for Data Science, IRI 2018*, pp. 465–471, Aug. 2018, doi: 10.1109/IRI.2018.00074.
- [54] P. Chudzik, S. Majumdar, F. Calivá, B. Al-Diri, and A. Hunter, "Microaneurysm detection using fully convolutional neural networks," *Comput Methods Programs Biomed*, vol. 158, pp. 185–192, May 2018, doi: 10.1016/J.CMPB.2018.02.016.
- [55] Y. Yan, J. Gong, and Y. Liu, "A Novel Deep Learning Method for Red Lesions Detection Using Hybrid Feature," *Proceedings of the 31st Chinese Control and Decision Conference, CCDC 2019*, pp. 2287–2292, Jun. 2019, doi: 10.1109/CCDC.2019.8833190.
- [56] K. Adem, "Exudate detection for diabetic retinopathy with circular Hough transformation and convolutional neural networks," *Expert Syst Appl*, vol. 114, pp. 289–295, Dec. 2018, doi: 10.1016/J.ESWA.2018.07.053.
- [57] H. Wang *et al.*, "Hard exudate detection based on deep model learned information and multi-feature joint representation for diabetic retinopathy screening," *Comput Methods Programs Biomed*, vol. 191, p. 105398, Jul. 2020, doi: 10.1016/J.CMPB.2020.105398.
- [58] P. Furtado, "Multi-class segmentation of Diabetic Retinopathy lesions: Effects of metrics, improvements and loss," *Proceedings - 19th IEEE International Conference on Machine Learning and Applications, ICMLA 2020*, pp. 1410–1417, Dec. 2020, doi: 10.1109/ICMLA51294.2020.00219.
- [59] N. Shaukat, J. Amin, M. I. Sharif, M. I. Sharif, S. Kadry, and L. Sevcik, "Classification and Segmentation of Diabetic Retinopathy: A Systemic Review," *Applied Sciences* 2023, Vol. 13, Page 3108, vol. 13, no. 5, p. 3108, Feb. 2023, doi: 10.3390/AP13053108.
- [60] T. Kauppi, V. Kalesnykiene, J. Kamarainen, L. L.- BMVC, and undefined 2007, "The diaretdb1 diabetic retinopathy database and evaluation protocol," *it.lut.fi*, Accessed: May 01, 2023. [Online]. Available: https://www.it.lut.fi/project/imageret/diaretdb1/doc/diaretdb1_techreport_v1_1.pdf
- [61] T. Li, Y. Gao, K. Wang, S. Guo, H. Liu, and H. Kang, "Diagnostic assessment of deep learning algorithms for diabetic retinopathy screening," *Inf Sci (N Y)*, vol. 501, pp. 511–522, Oct. 2019, doi: 10.1016/J.INS.2019.06.011.
- [62] M. Karakaya and R. E. Hacısoftaoglu, "Comparison of smartphone-based retinal imaging systems for diabetic retinopathy detection using deep learning," *BMC Bioinformatics*, vol. 21, no. 4, pp. 1–18, Jul. 2020, doi: 10.1186/S12859-020-03587-2/TABLES/3.
- [63] M. A. P. Vilela, F. M. Valença, P. K. M. Barreto, C. E. V. Amaral, and L. C. Pellanda, "Agreement between retinal images obtained via smartphones and images obtained with retinal cameras or fundoscopic exams – Systematic review and meta-analysis," *Clinical Ophthalmology*, vol. 12, pp. 2581–2589, 2018, doi: 10.2147/OPHTH.S182022.
- [64] R. Hu, R. J. Chalakkal, G. Linde, and J. S. Dhupia, "Multi-image Stitching for Smartphone-based Retinal Fundus Stitching," *IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM*, vol. 2022-July, pp. 179–184, 2022, doi: 10.1109/AIM52237.2022.9863260.
- [65] R. Besenczi, J. Tóth, and A. Hajdu, "A review on automatic analysis techniques for color fundus photographs," *Comput Struct Biotechnol J*, vol. 14, pp. 371–384, 2016, doi: 10.1016/J.CSBJ.2016.10.001.
- [66] X. Xu *et al.*, "Smartphone-Based Accurate Analysis of Retinal Vasculature towards Point-of-Care Diagnostics," *Scientific Reports* 2016 6:1, vol. 6, no. 1, pp. 1–9, Oct. 2016, doi: 10.1038/srep34603.
- [67] M. Hossain, W. N. M. Isa, A. Ali, W. M. D. W. Zaki, N. Hashim, and A. Hussain, "Optimized Smartphone-based Implementation of B-COSFIRE Filter for Retinal Blood Vessel Segmentation," *2022 IEEE International Conference on Computing, ICOCO 2022*, pp. 74–79, 2022, doi: 10.1109/ICOCO56118.2022.10031761.
- [68] T. T. Khaing, P. Aimmancee, S. Makhanov, and H. Haneishi, "Vessel-based hybrid optic disk segmentation applied to mobile phone camera retinal images," *Med Biol Eng Comput*, vol. 60, no. 2, pp. 421–437, Feb. 2022, doi: 10.1007/S11517-021-02484-X.
- [69] R. E. Hacısoftaoglu, M. Karakaya, and A. B. Sallam, "Deep learning frameworks for diabetic retinopathy detection with smartphone-based retinal imaging systems," *Pattern Recognit Lett*, vol. 135, pp. 409–417, Jul. 2020, doi: 10.1016/J.PATREC.2020.04.009.
- [70] S. Sengupta, M. D. Sindal, P. Baskaran, U. Pan, and R. Venkatesh, "Sensitivity and Specificity of Smartphone-Based Retinal Imaging for Diabetic Retinopathy: A Comparative Study," *Ophthalmol Retina*, vol. 3, no. 2, pp. 146–153, Feb. 2019, doi: 10.1016/J.ORET.2018.09.016.
- [71] R. Rajalakshmi, R. Subashini, R. M. Anjana, and V. Mohan, "Automated diabetic retinopathy detection in smartphone-based fundus photography using artificial intelligence," *Eye* 2018 32:6, vol. 32, no. 6, pp. 1138–1144, Mar. 2018, doi: 10.1038/s41433-018-0064-9.
- [72] O. Russakovsky *et al.*, "ImageNet Large Scale Visual Recognition Challenge," *Int J Comput Vis*, vol. 115, no. 3, pp. 211–252, Dec. 2015, doi: 10.1007/S11263-015-0816-Y.
- [73] P. Iakubovskii, "Segmentation Models," *GitHub repository*. GitHub, 2019.