

# Bibliography

- [1] M. Hardy and H. Harvey, “Artificial intelligence in diagnostic imaging: impact on the radiography profession,” *The British journal of radiology*, vol. 93, no. 1108, p. 20190840, 2020.
- [2] K. Simonyan and A. Zisserman, “Very Deep Convolutional Networks for Large-Scale Image Recognition,” 2014. Publisher: arXiv Version Number: 6.
- [3] Y. Zhou, X. He, L. Huang, L. Liu, F. Zhu, S. Cui, and L. Shao, “Collaborative Learning of Semi-Supervised Segmentation and Classification for Medical Images,” in *2019 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, (Long Beach, CA, USA), pp. 2074–2083, IEEE, June 2019.
- [4] S. Hochreiter, “The vanishing gradient problem during learning recurrent neural nets and problem solutions,” *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, vol. 6, no. 02, pp. 107–116, 1998.
- [5] D. Justus, J. Brennan, S. Bonner, and A. S. McGough, “Predicting the computational cost of deep learning models,” in *2018 IEEE international conference on big data (Big Data)*, pp. 3873–3882, IEEE, 2018.
- [6] G. Klambauer, T. Unterthiner, A. Mayr, and S. Hochreiter, “Self-normalizing neural networks,” *Advances in neural information processing systems*, vol. 30, 2017.
- [7] C. Nwankpa, W. Ijomah, A. Gachagan, and S. Marshall, “Activation functions: Comparison of trends in practice and research for deep learning,” *arXiv preprint arXiv:1811.03378*, 2018.
- [8] C. Szegedy, V. Vanhoucke, S. Ioffe, J. Shlens, and Z. Wojna, “Rethinking the Inception Architecture for Computer Vision,” Dec. 2015. Number: arXiv:1512.00567 arXiv:1512.00567 [cs].

- [9] A. G. Howard, M. Zhu, B. Chen, D. Kalenichenko, W. Wang, T. Weyand, M. Andreetto, and H. Adam, “MobileNets: Efficient Convolutional Neural Networks for Mobile Vision Applications,” Apr. 2017. Number: arXiv:1704.04861 arXiv:1704.04861 [cs].
- [10] K. Polat and S. Güneş, “Breast cancer diagnosis using least square support vector machine,” *Digital signal processing*, vol. 17, no. 4, pp. 694–701, 2007.
- [11] D. W. Langerhuizen, S. J. Janssen, W. H. Mallee, M. P. Van Den Bekerom, D. Ring, G. M. Kerkhoffs, R. L. Jaarsma, and J. N. Doornberg, “What are the applications and limitations of artificial intelligence for fracture detection and classification in orthopaedic trauma imaging? a systematic review,” *Clinical orthopaedics and related research*, vol. 477, no. 11, p. 2482, 2019.
- [12] C. Sowmiya and P. Sumitra, “Analytical study of heart disease diagnosis using classification techniques,” in *2017 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS)*, pp. 1–5, IEEE, 2017.
- [13] G. W. Hawryluk and G. T. Manley, “Classification of traumatic brain injury: past, present, and future,” *Handbook of clinical neurology*, vol. 127, pp. 15–21, 2015.
- [14] S. Vujosevic, S. J. Aldington, P. Silva, C. Hernández, P. Scanlon, T. Peto, and R. Simó, “Screening for diabetic retinopathy: new perspectives and challenges,” *The Lancet Diabetes & Endocrinology*, vol. 8, no. 4, pp. 337–347, 2020.
- [15] A. A. A. Setio, F. Ciompi, G. Litjens, P. Gerke, C. Jacobs, S. J. Van Riel, M. M. W. Wille, M. Naqibullah, C. I. Sánchez, and B. Van Ginneken, “Pulmonary nodule detection in ct images: false positive reduction using multi-view convolutional networks,” *IEEE transactions on medical imaging*, vol. 35, no. 5, pp. 1160–1169, 2016.
- [16] K. Sinusas, “Osteoarthritis: diagnosis and treatment,” *American family physician*, vol. 85, no. 1, pp. 49–56, 2012.
- [17] L. Liu, J. Xu, Y. Huan, Z. Zou, S.-C. Yeh, and L.-R. Zheng, “A smart dental health-iot platform based on intelligent hardware, deep learning, and mobile terminal,” *IEEE journal of biomedical and health informatics*, vol. 24, no. 3, pp. 898–906, 2019.
- [18] N. Gordillo, E. Montseny, and P. Sobrevilla, “State of the art survey on mri brain tumor segmentation,” *Magnetic resonance imaging*, vol. 31, no. 8, pp. 1426–1438, 2013.

- [19] P. Campadelli, E. Casiraghi, and A. Esposito, “Liver segmentation from computed tomography scans: a survey and a new algorithm,” *Artificial intelligence in medicine*, vol. 45, no. 2-3, pp. 185–196, 2009.
- [20] J. Chen, L. Wu, J. Zhang, L. Zhang, D. Gong, Y. Zhao, S. Hu, Y. Wang, X. Hu, B. Zheng, K. Zhang, H. Wu, Z. Dong, Y. Xu, Y. Zhu, X. Chen, L. Yu, and H. Yu, “Deep learning-based model for detecting 2019 novel coronavirus pneumonia on high-resolution computed tomography: a prospective study,” preprint, *Infectious Diseases (except HIV/AIDS)*, Feb. 2020.
- [21] M. Niemeijer, J. Staal, B. Van Ginneken, M. Loog, and M. D. Abramoff, “Comparative study of retinal vessel segmentation methods on a new publicly available database,” in *Medical imaging 2004: image processing*, vol. 5370, pp. 648–656, SPIE, 2004.
- [22] T. Singhal, “A Review of Coronavirus Disease-2019 (COVID-19),” *The Indian Journal of Pediatrics*, vol. 87, pp. 281–286, Apr. 2020.
- [23] M. Cascella, M. Rajnik, A. Aleem, S. C. Dulebohn, and R. Di Napoli, “Features, Evaluation, and Treatment of Coronavirus (COVID-19),” in *StatPearls*, Treasure Island (FL): StatPearls Publishing, 2022.
- [24] M. A. Johansson, T. M. Quandelacy, S. Kada, P. V. Prasad, M. Steele, J. T. Brooks, R. B. Slayton, M. Biggerstaff, and J. C. Butler, “SARS-CoV-2 Transmission From People Without COVID-19 Symptoms,” *JAMA Network Open*, vol. 4, p. e2035057, Jan. 2021.
- [25] F. P. Polack, S. J. Thomas, N. Kitchin, J. Absalon, A. Gurtman, S. Lockhart, J. L. Perez, G. Pérez Marc, E. D. Moreira, C. Zerbini, R. Bailey, K. A. Swanson, S. Roychoudhury, K. Koury, P. Li, W. V. Kalina, D. Cooper, R. W. Frenck, L. L. Hammitt, Türeci, H. Nell, A. Schaefer, S. Ünal, D. B. Tresnan, S. Mather, P. R. Dormitzer, U. Şahin, K. U. Jansen, and W. C. Gruber, “Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine,” *New England Journal of Medicine*, vol. 383, pp. 2603–2615, Dec. 2020.
- [26] S. M. Kissler, J. R. Fauver, C. Mack, C. G. Tai, M. I. Breban, A. E. Watkins, R. M. Samant, D. J. Anderson, J. Metti, G. Khullar, R. Baits, M. MacKay, D. Salgado, T. Baker, J. T. Dudley, C. E. Mason, D. D. Ho, N. D. Grubaugh, and Y. H. Grad, “Viral Dynamics of SARS-CoV-2 Variants in Vaccinated and Unvaccinated Persons,” *New England Journal of Medicine*, vol. 385, pp. 2489–2491, Dec. 2021.

- [27] B. Giri, S. Pandey, R. Shrestha, K. Pokharel, F. S. Ligler, and B. B. Neupane, “Review of analytical performance of COVID-19 detection methods,” *Analytical and Bioanalytical Chemistry*, vol. 413, pp. 35–48, Jan. 2021.
- [28] Y. Fang, H. Zhang, J. Xie, M. Lin, L. Ying, P. Pang, and W. Ji, “Sensitivity of Chest CT for COVID-19: Comparison to RT-PCR,” *Radiology*, vol. 296, pp. E115–E117, Aug. 2020.
- [29] S. Albahli and W. Albattah, “Deep Transfer Learning for COVID-19 Prediction: Case Study for Limited Data Problems,” *Current Medical Imaging Formerly Current Medical Imaging Reviews*, vol. 17, pp. 973–980, Aug. 2021.
- [30] A. Krizhevsky, I. Sutskever, and G. E. Hinton, “ImageNet classification with deep convolutional neural networks,” *Communications of the ACM*, vol. 60, pp. 84–90, May 2017.
- [31] Y. Lecun, L. Bottou, Y. Bengio, and P. Haffner, “Gradient-based learning applied to document recognition,” *Proceedings of the IEEE*, vol. 86, pp. 2278–2324, Nov. 1998.
- [32] C. Szegedy, Wei Liu, Yangqing Jia, P. Sermanet, S. Reed, D. Anguelov, D. Erhan, V. Vanhoucke, and A. Rabinovich, “Going deeper with convolutions,” in *2015 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, (Boston, MA, USA), pp. 1–9, IEEE, June 2015.
- [33] O. Ronneberger, P. Fischer, and T. Brox, “U-Net: Convolutional Networks for Biomedical Image Segmentation,” in *Medical Image Computing and Computer-Assisted Intervention – MICCAI 2015* (N. Navab, J. Hornegger, W. M. Wells, and A. F. Frangi, eds.), vol. 9351, pp. 234–241, Cham: Springer International Publishing, 2015. Series Title: Lecture Notes in Computer Science.
- [34] L. Wang and A. Wong, “COVID-Net: A Tailored Deep Convolutional Neural Network Design for Detection of COVID-19 Cases from Chest X-Ray Images,” May 2020. Number: arXiv:2003.09871 arXiv:2003.09871 [cs, eess].
- [35] P. Rajpurkar, J. Irvin, K. Zhu, B. Yang, H. Mehta, T. Duan, D. Ding, A. Bagul, C. Langlotz, K. Shpanskaya, M. P. Lungren, and A. Y. Ng, “CheXNet: Radiologist-Level Pneumonia Detection on Chest X-Rays with Deep Learning,” 2017. Publisher: arXiv Version Number: 3.
- [36] S. H. Kassani, P. H. Kassasni, M. J. Wesolowski, K. A. Schneider, and R. Deters, “Automatic Detection of Coronavirus Disease (COVID-19) in X-ray and CT Images: A Machine Learning-Based Approach,” 2020. Publisher: arXiv Version Number: 1.

- [37] D. Arias-Garzón, J. A. Alzate-Grisales, S. Orozco-Arias, H. B. Arteaga-Arteaga, M. A. Bravo-Ortiz, A. Mora-Rubio, J. M. Saborit-Torres, J. M. Serrano, M. de la Iglesia Vayá, O. Cardona-Morales, and R. Tabares-Soto, “COVID-19 detection in X-ray images using convolutional neural networks,” *Machine Learning with Applications*, vol. 6, p. 100138, Dec. 2021.
- [38] A. K. Das, S. Ghosh, S. Thunder, R. Dutta, S. Agarwal, and A. Chakrabarti, “Automatic COVID-19 detection from X-ray images using ensemble learning with convolutional neural network,” *Pattern Analysis and Applications*, vol. 24, pp. 1111–1124, Aug. 2021.
- [39] H. S. Maghdid, K. Z. Ghafoor, A. S. Sadiq, K. Curran, D. B. Rawat, and K. Rabie, “A Novel AI-enabled Framework to Diagnose Coronavirus COVID-19 using Smartphone Embedded Sensors: Design Study,” in *2020 IEEE 21st International Conference on Information Reuse and Integration for Data Science (IRI)*, (Las Vegas, NV, USA), pp. 180–187, IEEE, Aug. 2020.
- [40] H. S. Maghdid, A. T. Asaad, K. Z. Ghafoor, A. S. Sadiq, and M. K. Khan, “Diagnosing COVID-19 Pneumonia from X-Ray and CT Images using Deep Learning and Transfer Learning Algorithms,” 2020. Publisher: arXiv Version Number: 1.
- [41] S. Shah, A. Mulahuwaish, K. Z. Ghafoor, and H. S. Maghdid, “Prediction of global spread of COVID-19 pandemic: a review and research challenges,” *Artificial Intelligence Review*, vol. 55, pp. 1607–1628, Mar. 2022.
- [42] H. S. Maghdid and K. Z. Ghafoor, “A Smartphone Enabled Approach to Manage COVID-19 Lockdown and Economic Crisis,” *SN Computer Science*, vol. 1, p. 271, Sept. 2020.
- [43] F. O. Catak and K. Şahinbaş, “Human-in-the-Loop Enhanced COVID-19 Detection in Transfer Learning-Based CNN Models,” in *Computational Intelligence for COVID-19 and Future Pandemics* (U. Kose, J. Watada, O. Deperlioglu, and J. A. Marmolejo Saucedo, eds.), pp. 71–87, Singapore: Springer Singapore, 2022.
- [44] J. Yang and J. Li, “Application of deep convolution neural network,” in *2017 14th International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP)*, (Chengdu), pp. 229–232, IEEE, Dec. 2017.
- [45] T. Ching, D. S. Himmelstein, B. K. Beaulieu-Jones, A. A. Kalinin, B. T. Do, G. P. Way, E. Ferrero, P.-M. Agapow, M. Zietz, M. M. Hoffman, W. Xie, G. L. Rosen, B. J. Lengerich,

- J. Israeli, J. Lanchantin, S. Woloszynek, A. E. Carpenter, A. Shrikumar, J. Xu, E. M. Cofer, C. A. Lavender, S. C. Turaga, A. M. Alexandari, Z. Lu, D. J. Harris, D. DeCaprio, Y. Qi, A. Kundaje, Y. Peng, L. K. Wiley, M. H. S. Segler, S. M. Boca, S. J. Swamidass, A. Huang, A. Gitter, and C. S. Greene, “Opportunities and obstacles for deep learning in biology and medicine,” *Journal of The Royal Society Interface*, vol. 15, p. 20170387, Apr. 2018.
- [46] C. Tan, F. Sun, T. Kong, W. Zhang, C. Yang, and C. Liu, “A Survey on Deep Transfer Learning,” Aug. 2018. arXiv:1808.01974 [cs, stat].
- [47] P. Chlap, H. Min, N. Vandenberg, J. Dowling, L. Holloway, and A. Haworth, “A review of medical image data augmentation techniques for deep learning applications,” *Journal of Medical Imaging and Radiation Oncology*, vol. 65, no. 5, pp. 545–563, 2021.
- [48] N. V. Chawla, “Data mining for imbalanced datasets: An overview,” *Data mining and knowledge discovery handbook*, pp. 875–886, 2010.
- [49] H. E. Kim, A. Cosa-Linan, N. Santhanam, M. Jannesari, M. E. Maros, and T. Ganslandt, “Transfer learning for medical image classification: a literature review,” *BMC medical imaging*, vol. 22, no. 1, p. 69, 2022.
- [50] F. Shaheen, B. Verma, and M. Asafuddoula, “Impact of automatic feature extraction in deep learning architecture,” in *2016 International conference on digital image computing: techniques and applications (DICTA)*, pp. 1–8, IEEE, 2016.
- [51] D. Yogatama and G. Mann, “Efficient transfer learning method for automatic hyperparameter tuning,” in *Artificial intelligence and statistics*, pp. 1077–1085, PMLR, 2014.
- [52] S. M. Kakade, S. Shalev-Shwartz, and A. Tewari, “Regularization techniques for learning with matrices,” *The Journal of Machine Learning Research*, vol. 13, no. 1, pp. 1865–1890, 2012.
- [53] Z. Niu, G. Zhong, and H. Yu, “A review on the attention mechanism of deep learning,” *Neurocomputing*, vol. 452, pp. 48–62, 2021.
- [54] X. Dong, Z. Yu, W. Cao, Y. Shi, and Q. Ma, “A survey on ensemble learning,” *Frontiers of Computer Science*, vol. 14, pp. 241–258, 2020.

- [55] M. T. Law, A. L. Traboulsee, D. K. Li, R. L. Carruthers, M. S. Freedman, S. H. Kolind, and R. Tam, “Machine learning in secondary progressive multiple sclerosis: an improved predictive model for short-term disability progression,” *Multiple Sclerosis Journal—Experimental, Translational and Clinical*, vol. 5, no. 4, p. 2055217319885983, 2019.
- [56] N. Patricia and B. Caputo, “Learning to learn, from transfer learning to domain adaptation: A unifying perspective,” in *Proceedings of the IEEE conference on computer vision and pattern recognition*, pp. 1442–1449, 2014.
- [57] J. D. Fuhrman, N. Gorre, Q. Hu, H. Li, I. El Naqa, and M. L. Giger, “A review of explainable and interpretable ai with applications in covid-19 imaging,” *Medical Physics*, vol. 49, no. 1, pp. 1–14, 2022.
- [58] H. Ieki, K. Ito, M. Saji, R. Kawakami, Y. Nagatomo, K. Takada, T. Kariyasu, H. Machida, S. Koyama, H. Yoshida, R. Kurosawa, H. Matsunaga, K. Miyazawa, K. Ozaki, Y. Onouchi, S. Katsushika, R. Matsuoka, H. Shinohara, T. Yamaguchi, S. Kodera, Y. Higashikuni, K. Fujii, H. Akazawa, N. Iguchi, M. Isobe, T. Yoshikawa, and I. Komuro, “Deep learning-based age estimation from chest X-rays indicates cardiovascular prognosis,” *Communications Medicine*, vol. 2, p. 159, Dec. 2022.
- [59] K. Hammoudi, H. Benhabiles, M. Melkemi, F. Dornaika, I. Arganda-Carreras, D. Collard, and A. Scherpereel, “Deep Learning on Chest X-ray Images to Detect and Evaluate Pneumonia Cases at the Era of COVID-19,” *Journal of Medical Systems*, vol. 45, p. 75, July 2021.
- [60] C. Solomou and D. Kazakov, “Utilizing chest x-rays for age prediction and gender classification,” in *2021 4th International Seminar on Research of Information Technology and Intelligent Systems (ISRITI)*, pp. 356–361, IEEE, 2021.
- [61] L. Álvarez Rodríguez, J. D. Moura, J. Novo, and M. Ortega, “Does imbalance in chest X-ray datasets produce biased deep learning approaches for COVID-19 screening?,” *BMC Medical Research Methodology*, vol. 22, p. 125, Dec. 2022.
- [62] A. J. Larrazabal, N. Nieto, V. Peterson, D. H. Milone, and E. Ferrante, “Gender imbalance in medical imaging datasets produces biased classifiers for computer-aided diagnosis,” *Proceedings of the National Academy of Sciences*, vol. 117, pp. 12592–12594, June 2020.

- [63] L. Seyyed-Kalantari, H. Zhang, M. B. McDermott, I. Y. Chen, and M. Ghassemi, “Under-diagnosis bias of artificial intelligence algorithms applied to chest radiographs in under-served patient populations,” *Nature medicine*, vol. 27, no. 12, pp. 2176–2182, 2021.
- [64] L. Seyyed-Kalantari, H. Zhang, M. B. A. McDermott, I. Y. Chen, and M. Ghassemi, “Under-diagnosis bias of artificial intelligence algorithms applied to chest radiographs in under-served patient populations,” *Nature Medicine*, vol. 27, pp. 2176–2182, Dec. 2021.
- [65] B. Garcia Santa Cruz, M. N. Bossa, J. Sölter, and A. D. Husch, “Public Covid-19 X-ray datasets and their impact on model bias – A systematic review of a significant problem,” *Medical Image Analysis*, vol. 74, p. 102225, Dec. 2021.
- [66] B. T. Jankowitz and P. D. Adelson, “Pediatric traumatic brain injury: past, present and future,” *Developmental neuroscience*, vol. 28, no. 4-5, pp. 264–275, 2006.
- [67] N. Raschle, J. Zuk, S. Ortiz-Mantilla, D. D. Sliva, A. Franceschi, P. E. Grant, A. A. Benasich, and N. Gaab, “Pediatric neuroimaging in early childhood and infancy: challenges and practical guidelines,” *Annals of the New York Academy of sciences*, vol. 1252, no. 1, pp. 43–50, 2012.
- [68] L. Matrajt, J. Eaton, T. Leung, and E. R. Brown, “Vaccine optimization for covid-19: Who to vaccinate first?,” *Science Advances*, vol. 7, no. 6, p. eabf1374, 2021.
- [69] K. Yuki, M. Fujiogi, and S. Koutsogiannaki, “Covid-19 pathophysiology: A review,” *Clinical immunology*, vol. 215, p. 108427, 2020.
- [70] K. B. Ahmed, G. M. Goldgof, R. Paul, D. B. Goldgof, and L. O. Hall, “Discovery of a generalization gap of convolutional neural networks on covid-19 x-rays classification,” *Ieee Access*, vol. 9, pp. 72970–72979, 2021.
- [71] A. Vicco, C. McCormack, B. Pedrique, I. Ribeiro, G. N. Malavige, and I. Dorigatti, “A scoping literature review of global dengue age-stratified seroprevalence data: estimating dengue force of infection in endemic countries,” *medRxiv*, pp. 2023–04, 2023.
- [72] A. Alraddadi, “Literature review of anatomical variations: clinical significance, identification approach, and teaching strategies,” *Cureus*, vol. 13, no. 4, 2021.
- [73] G. Vrbančić and V. Podgorelec, “Transfer learning with adaptive fine-tuning,” *IEEE Access*, vol. 8, pp. 196197–196211, 2020.

- [74] O. Sagi and L. Rokach, “Ensemble learning: A survey,” *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, vol. 8, no. 4, p. e1249, 2018.
- [75] A. Mumuni and F. Mumuni, “Data augmentation: A comprehensive survey of modern approaches,” *Array*, p. 100258, 2022.
- [76] M. Karim, T. Döhmen, D. Rebholz-Schuhmann, S. Decker, M. Cochez, O. Beyan, *et al.*, “Deepcovidexplainer: Explainable covid-19 predictions based on chest x-ray images,” *arXiv preprint arXiv:2004.04582*, vol. 28, 2020.
- [77] D. Brasfield, G. Hicks, S. Soong, J. Peters, and R. Tiller, “Evaluation of scoring system of the chest radiograph in cystic fibrosis: a collaborative study,” *American Journal of Roentgenology*, vol. 134, no. 6, pp. 1195–1198, 1980.
- [78] M. Heidari, S. Mirniaharikandehi, A. Z. Khuzani, G. Danala, Y. Qiu, and B. Zheng, “Improving the performance of cnn to predict the likelihood of covid-19 using chest x-ray images with preprocessing algorithms,” *International journal of medical informatics*, vol. 144, p. 104284, 2020.
- [79] A. Mittal, A. K. Moorthy, and A. C. Bovik, “Making image quality assessment robust,” in *2012 Conference Record of the Forty Sixth Asilomar Conference on Signals, Systems and Computers (ASILOMAR)*, pp. 1718–1722, IEEE, 2012.
- [80] L. M. Connelly, “Ethical considerations in research studies,” *Medsurg nursing*, vol. 23, no. 1, pp. 54–56, 2014.
- [81] M. J. Rawle, D. L. Bertfield, and S. E. Brill, “Atypical presentations of COVID-19 in care home residents presenting to secondary care: A UK single centre study,” *AGING MEDICINE*, vol. 3, pp. 237–244, Dec. 2020.
- [82] S. Tripathi, A. Verma, and N. Sharma, “Augmented Deep Learning Architecture to Effectively Segment the Cancerous Regions in Biomedical Images,” in *2020 IEEE International Symposium on Sustainable Energy, Signal Processing and Cyber Security (iSSSC)*, (Gunupur Odisha, India), pp. 1–6, IEEE, Dec. 2020.
- [83] T. S. Sharan, S. Tripathi, S. Sharma, and N. Sharma, “Encoder Modified U-Net and Feature Pyramid Network for Multi-class Segmentation of Cardiac Magnetic Resonance Images,” *IETE Technical Review*, pp. 1–13, Aug. 2021.

- [84] S. Tripathi, A. Verma, and N. Sharma, "Automatic segmentation of brain tumour in MR images using an enhanced deep learning approach," *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, vol. 9, pp. 121–130, Mar. 2021.
- [85] S. Tripathi and N. Sharma, "Computer-Based Segmentation of Cancerous Tissues in Biomedical Images Using Enhanced Deep Learning Model," *IETE Technical Review*, pp. 1–15, Nov. 2021.
- [86] S. J. Pan and Q. Yang, "A Survey on Transfer Learning," *IEEE Transactions on Knowledge and Data Engineering*, vol. 22, pp. 1345–1359, Oct. 2010.
- [87] M. Hussain, J. J. Bird, and D. R. Faria, "A Study on CNN Transfer Learning for Image Classification," in *Advances in Computational Intelligence Systems* (A. Lotfi, H. Bouchachia, A. Gegov, C. Langensiepen, and M. McGinnity, eds.), vol. 840, pp. 191–202, Cham: Springer International Publishing, 2019. Series Title: Advances in Intelligent Systems and Computing.
- [88] K. El Asnaoui and Y. Chawki, "Using X-ray images and deep learning for automated detection of coronavirus disease," *Journal of Biomolecular Structure and Dynamics*, vol. 39, pp. 3615–3626, July 2021.
- [89] M. Zreik, R. W. van Hamersvelt, J. M. Wolterink, T. Leiner, M. A. Viergever, and I. Isgum, "A Recurrent CNN for Automatic Detection and Classification of Coronary Artery Plaque and Stenosis in Coronary CT Angiography," *IEEE Transactions on Medical Imaging*, vol. 38, pp. 1588–1598, July 2019.
- [90] J. R. Hagerty, R. J. Stanley, H. A. Almubarak, N. Lama, R. Kasmi, P. Guo, R. J. Drugge, H. S. Rabinovitz, M. Oliviero, and W. V. Stoecker, "Deep Learning and Handcrafted Method Fusion: Higher Diagnostic Accuracy for Melanoma Dermoscopy Images," *IEEE Journal of Biomedical and Health Informatics*, vol. 23, pp. 1385–1391, July 2019.
- [91] L. Li, L. Qin, Z. Xu, Y. Yin, X. Wang, B. Kong, J. Bai, Y. Lu, Z. Fang, Q. Song, K. Cao, D. Liu, G. Wang, Q. Xu, X. Fang, S. Zhang, J. Xia, and J. Xia, "Using Artificial Intelligence to Detect COVID-19 and Community-acquired Pneumonia Based on Pulmonary CT: Evaluation of the Diagnostic Accuracy," *Radiology*, vol. 296, pp. E65–E71, Aug. 2020.
- [92] T. K. Ho and J. Gwak, "Multiple Feature Integration for Classification of Thoracic Disease in Chest Radiography," *Applied Sciences*, vol. 9, p. 4130, Oct. 2019.

- [93] C. Zheng, X. Deng, Q. Fu, Q. Zhou, J. Feng, H. Ma, W. Liu, and X. Wang, “Deep Learning-based Detection for COVID-19 from Chest CT using Weak Label,” preprint, *Infectious Diseases (except HIV/AIDS)*, Mar. 2020.
- [94] O. Gozes, M. Frid-Adar, H. Greenspan, P. D. Browning, H. Zhang, W. Ji, A. Bernheim, and E. Siegel, “Rapid AI Development Cycle for the Coronavirus (COVID-19) Pandemic: Initial Results for Automated Detection & Patient Monitoring using Deep Learning CT Image Analysis,” Mar. 2020. Number: arXiv:2003.05037 arXiv:2003.05037 [cs, eess].
- [95] D. Chicco and G. Jurman, “The advantages of the Matthews correlation coefficient (MCC) over F1 score and accuracy in binary classification evaluation,” *BMC Genomics*, vol. 21, p. 6, Dec. 2020.
- [96] A. F. Agarap, “Deep Learning using Rectified Linear Units (ReLU),” Feb. 2019. Number: arXiv:1803.08375 arXiv:1803.08375 [cs, stat].
- [97] S. Wang, B. Kang, J. Ma, X. Zeng, M. Xiao, J. Guo, M. Cai, J. Yang, Y. Li, X. Meng, and B. Xu, “A deep learning algorithm using CT images to screen for Corona Virus Disease (COVID-19),” preprint, *Infectious Diseases (except HIV/AIDS)*, Feb. 2020.
- [98] S. Boughorbel, F. Jarray, and M. El-Anbari, “Optimal classifier for imbalanced data using Matthews Correlation Coefficient metric,” *PLOS ONE*, vol. 12, p. e0177678, June 2017.
- [99] T. Villmann, M. Kaden, M. Lange, P. Sturmer, and W. Hermann, “Precision-Recall Optimization in Learning Vector Quantization Classifiers for Improved Medical Classification Systems,” in *2014 IEEE Symposium on Computational Intelligence and Data Mining (CIDM)*, (Orlando, FL, USA), pp. 71–77, IEEE, Dec. 2014.
- [100] M. D. Ruopp, N. J. Perkins, B. W. Whitcomb, and E. F. Schisterman, “Youden Index and Optimal Cut-Point Estimated from Observations Affected by a Lower Limit of Detection,” *Biometrical Journal*, vol. 50, pp. 419–430, June 2008.
- [101] X. Zhang, X. Zhou, M. Lin, and J. Sun, “ShuffleNet: An Extremely Efficient Convolutional Neural Network for Mobile Devices,” Dec. 2017. Number: arXiv:1707.01083 arXiv:1707.01083 [cs].
- [102] A. K. Savaashe and N. V. Dharwadkar, “A Review on Cardiac Image Segmentation,” in *2019 3rd International Conference on Computing Methodologies and Communication (ICCMC)*, (Erode, India), pp. 545–550, IEEE, Mar. 2019.

- [103] J. P. Earls, V. B. Ho, T. K. Foo, E. Castillo, and S. D. Flamm, "Cardiac MRI: Recent progress and continued challenges," *Journal of Magnetic Resonance Imaging*, vol. 16, pp. 111–127, Aug. 2002.
- [104] M. R. Avendi, A. Kheradvar, and H. Jafarkhani, "A Combined Deep-Learning and Deformable-Model Approach to Fully Automatic Segmentation of the Left Ventricle in Cardiac MRI," 2015. Publisher: arXiv Version Number: 1.
- [105] Y. Luo, L. Xu, and L. Qi, "A cascaded FC-DenseNet and level set method (FCDL) for fully automatic segmentation of the right ventricle in cardiac MRI," *Medical & Biological Engineering & Computing*, vol. 59, pp. 561–574, Mar. 2021.
- [106] S. Tripathi, T. S. Sharan, S. Sharma, and N. Sharma, "An Augmented Deep Learning Network with Noise Suppression Feature for Efficient Segmentation of Magnetic Resonance Images," *IETE Technical Review*, pp. 1–14, June 2021.
- [107] R. Bhattacharjee, F. Heitz, V. Noblet, S. Sharma, and N. Sharma, "Evaluation of a Learning-based Deformable Registration Method on Abdominal CT Images," *IRBM*, vol. 42, pp. 94–105, Apr. 2021.
- [108] G. Yang, J. Lv, Y. Chen, J. Huang, and J. Zhu, "Generative Adversarial Networks (GAN) Powered Fast Magnetic Resonance Imaging – Mini Review, Comparison and Perspectives," 2021. Publisher: arXiv Version Number: 1.
- [109] H. Ng, S. Ong, K. Foong, P. Goh, and W. Nowinski, "Medical Image Segmentation Using K-Means Clustering and Improved Watershed Algorithm," in *2006 IEEE Southwest Symposium on Image Analysis and Interpretation*, (Denver, CO), pp. 61–65, IEEE, 2006.
- [110] J. Chen, G. Yang, H. Khan, H. Zhang, Y. Zhang, S. Zhao, R. Mohiaddin, T. Wong, D. Firmin, and J. Keegan, "JAS-GAN: Generative Adversarial Network Based Joint Atrium and Scar Segmentations on Unbalanced Atrial Targets," *IEEE journal of biomedical and health informatics*, vol. 26, pp. 103–114, Jan. 2022.
- [111] X. Zhou, Q. Ye, Y. Jiang, M. Wang, Z. Niu, W. Menpes-Smith, E. F. Fang, Z. Liu, J. Xia, and G. Yang, "Systematic and Comprehensive Automated Ventricle Segmentation on Ventricle Images of the Elderly Patients: A Retrospective Study," *Frontiers in Aging Neuroscience*, vol. 12, p. 618538, Dec. 2020.

- [112] X. Chen, W. Sun, D. Xu, J. Ma, F. Xiao, and H. Xu, “Temporal changes of quantitative CT findings from 102 patients with COVID-19 in Wuhan, China: A longitudinal study,” *Technology and Health Care*, vol. 29, pp. 297–309, Mar. 2021.
- [113] C. Dong, X. Zeng, L. Lin, H. Hu, X. Han, M. Naghedolfeizi, D. Aberra, and Y.-W. Chen, “An Improved Random Walker with Bayes Model for Volumetric Medical Image Segmentation,” *Journal of Healthcare Engineering*, vol. 2017, pp. 1–11, 2017.
- [114] M. Li, C. Wang, H. Zhang, and G. Yang, “MV-RAN: Multiview recurrent aggregation network for echocardiographic sequences segmentation and full cardiac cycle analysis,” *Computers in Biology and Medicine*, vol. 120, p. 103728, May 2020.
- [115] Z. Zhang and M. R. Sabuncu, “Generalized Cross Entropy Loss for Training Deep Neural Networks with Noisy Labels,” 2018. Publisher: arXiv Version Number: 4.
- [116] Z. Shi, G. Zeng, L. Zhang, X. Zhuang, L. Li, G. Yang, and G. Zheng, “Bayesian VoxDRN: A Probabilistic Deep Voxelwise Dilated Residual Network for Whole Heart Segmentation from 3D MR Images,” in *Medical Image Computing and Computer Assisted Intervention – MICCAI 2018* (A. F. Frangi, J. A. Schnabel, C. Davatzikos, C. Alberola-López, and G. Fichtinger, eds.), vol. 11073, pp. 569–577, Cham: Springer International Publishing, 2018. Series Title: Lecture Notes in Computer Science.
- [117] F. Milletari, N. Navab, and S.-A. Ahmadi, “V-Net: Fully Convolutional Neural Networks for Volumetric Medical Image Segmentation,” 2016. Publisher: arXiv Version Number: 1.
- [118] Y. Mo, F. Liu, D. McIlwraith, G. Yang, J. Zhang, T. He, and Y. Guo, “The Deep Poincaré Map: A Novel Approach for Left Ventricle Segmentation,” 2017. Publisher: arXiv Version Number: 2.
- [119] G. Yang, J. Chen, Z. Gao, S. Li, H. Ni, E. Angelini, T. Wong, R. Mohiaddin, E. Nyktari, R. Wage, L. Xu, Y. Zhang, X. Du, H. Zhang, D. Firmin, and J. Keegan, “Simultaneous left atrium anatomy and scar segmentations via deep learning in multiview information with attention,” *Future Generation Computer Systems*, vol. 107, pp. 215–228, June 2020.
- [120] Y. Liu, K. Sung, G. Yang, S. Afshari Mirak, M. Hosseiny, A. Azadikhah, X. Zhong, R. E. Reiter, Y. Lee, and S. S. Raman, “Automatic Prostate Zonal Segmentation Using Fully Convolutional Network With Feature Pyramid Attention,” *IEEE Access*, vol. 7, pp. 163626–163632, 2019.

- [121] H. Kervadec, J. Dolz, E. Granger, and I. B. Ayed, “Curriculum semi-supervised segmentation,” 2019. Publisher: arXiv Version Number: 2.
- [122] L. Han, Y. Huang, H. Dou, S. Wang, S. Ahamad, H. Luo, Q. Liu, J. Fan, and J. Zhang, “Semi-supervised segmentation of lesion from breast ultrasound images with attentional generative adversarial network,” *Computer Methods and Programs in Biomedicine*, vol. 189, p. 105275, June 2020.
- [123] D. Li, J. Yang, K. Kreis, A. Torralba, and S. Fidler, “Semantic Segmentation with Generative Models: Semi-Supervised Learning and Strong Out-of-Domain Generalization,” in *2021 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, (Nashville, TN, USA), pp. 8296–8307, IEEE, June 2021.
- [124] J. Santokhi, P. Daga, J. Sarwar, A. Jordan, and E. Hewage, “Temporal Autoencoder with U-Net Style Skip-Connections for Frame Prediction,” 2020. Publisher: arXiv Version Number: 1.
- [125] W. Deng, W. Xiao, H. Deng, and J. Liu, “MRI brain tumor segmentation with region growing method based on the gradients and variances along and inside of the boundary curve,” in *2010 3rd International Conference on Biomedical Engineering and Informatics*, (Yantai, China), pp. 393–396, IEEE, Oct. 2010.
- [126] N. S. M. Raja, S. L. Fernandes, N. Dey, S. C. Satapathy, and V. Rajinikanth, “Contrast enhanced medical MRI evaluation using Tsallis entropy and region growing segmentation,” *Journal of Ambient Intelligence and Humanized Computing*, May 2018.
- [127] N. Dhanachandra, K. Mangle, and Y. J. Chanu, “Image Segmentation Using K -means Clustering Algorithm and Subtractive Clustering Algorithm,” *Procedia Computer Science*, vol. 54, pp. 764–771, 2015.
- [128] R. S. Gereige and P. M. Laufer, “Pneumonia,” *Pediatrics in Review*, vol. 34, no. 10, pp. 438–456, 2013.