



DAFTAR PUSTAKA

- [1] K. O'Shea and R. Nash, "An Introduction to Convolutional Neural Networks," *CoRR*, vol. abs/1511.08458. [Online]. Available: <http://arxiv.org/abs/1511.08458>
- [2] Y. Zhang, B. Kang, B. Hooi, S. Yan, and J. Feng, "Deep Long-Tailed Learning: A Survey," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, pp. 1–20. [Online]. Available: <https://ieeexplore.ieee.org/document/10105457/>
- [3] W. Xia, C. Ma, J. Liu, S. Liu, F. Chen, Z. Yang, and J. Duan, "High-Resolution Remote Sensing Imagery Classification of Imbalanced Data Using Multistage Sampling Method and Deep Neural Networks," *Remote Sensing*, vol. 11, no. 21, p. 2523. [Online]. Available: <https://www.mdpi.com/2072-4292/11/21/2523>
- [4] F. Sani and J. Todman, *Experimental Design and Statistics for Psychology: A First Course*, 1st ed. Wiley. [Online]. Available: <https://onlinelibrary.wiley.com/doi/book/10.1002/9780470776124>
- [5] Y. LeCun, Y. Bengio, and G. Hinton, "Deep learning," *Nature*, vol. 521, no. 7553, pp. 436–444. [Online]. Available: <https://www.nature.com/articles/nature14539>
- [6] M. Pichler and F. Hartig, "Machine learning and deep learning—A review for ecologists," *Methods in Ecology and Evolution*, vol. 14, no. 4, pp. 994–1016. [Online]. Available: <https://besjournals.onlinelibrary.wiley.com/doi/10.1111/2041-210X.14061>
- [7] N. O'Mahony, S. Campbell, A. Carvalho, S. Harapanahalli, G. V. Hernandez, L. Krpalkova, D. Riordan, and J. Walsh, "Deep Learning vs. Traditional Computer Vision," in *Advances in Computer Vision*, K. Arai and S. Kapoor, Eds. Springer International Publishing, vol. 943, pp. 128–144. [Online]. Available: http://link.springer.com/10.1007/978-3-030-17795-9_10
- [8] A. Voulodimos, N. Doulamis, A. Doulamis, and E. Protopapadakis, "Deep Learning for Computer Vision: A Brief Review," *Computational Intelligence and Neuroscience*, vol. 2018, pp. 1–13. [Online]. Available: <https://www.hindawi.com/journals/cin/2018/7068349/>
- [9] J. M. Johnson and T. M. Khoshgoftaar, "Survey on deep learning with class imbalance," *Journal of Big Data*, vol. 6, no. 1, p. 27. [Online]. Available: <https://journalofbigdata.springeropen.com/articles/10.1186/s40537-019-0192-5>
- [10] J. L. Leevy, T. M. Khoshgoftaar, R. A. Bauder, and N. Seliya, "A survey on addressing high-class imbalance in big data," *Journal of Big Data*, vol. 5, no. 1, p. 42. [Online]. Available: <https://journalofbigdata.springeropen.com/articles/10.1186/s40537-018-0151-6>
- [11] V. S. Spelman and R. Porkodi, "A Review on Handling Imbalanced Data," in *2018 International Conference on Current Trends towards Converging Technologies (ICCTCT)*. IEEE, pp. 1–11. [Online]. Available: <https://ieeexplore.ieee.org/document/8551020/>



- [12] G. Haixiang, L. Yijing, J. Shang, G. Mingyun, H. Yuanyue, and G. Bing, "Learning from class-imbalanced data: Review of methods and applications," *Expert Systems with Applications*, vol. 73, pp. 220–239. [Online]. Available: <https://linkinghub.elsevier.com/retrieve/pii/S0957417416307175>
- [13] N. V. Chawla, K. W. Bowyer, L. O. Hall, and W. P. Kegelmeyer, "SMOTE: Synthetic Minority Over-sampling Technique," *Journal of Artificial Intelligence Research*, vol. 16, pp. 321–357. [Online]. Available: <https://www.jair.org/index.php/jair/article/view/10302>
- [14] M. A. Sahid, M. Hasan, N. Akter, and M. M. R. Tareq, "Effect of Imbalance Data Handling Techniques to Improve the Accuracy of Heart Disease Prediction using Machine Learning and Deep Learning," in *2022 IEEE Region 10 Symposium (TENSYMP)*. IEEE, pp. 1–6. [Online]. Available: <https://ieeexplore.ieee.org/document/9864473/>
- [15] H. Kaur, H. S. Pannu, and A. K. Malhi, "A Systematic Review on Imbalanced Data Challenges in Machine Learning: Applications and Solutions," *ACM Computing Surveys*, vol. 52, no. 4, pp. 1–36. [Online]. Available: <https://dl.acm.org/doi/10.1145/3343440>
- [16] S. Wang, W. Liu, J. Wu, L. Cao, Q. Meng, and P. J. Kennedy, "Training deep neural networks on imbalanced data sets," in *2016 International Joint Conference on Neural Networks (IJCNN)*. IEEE, pp. 4368–4374. [Online]. Available: <http://ieeexplore.ieee.org/document/7727770/>
- [17] S. Pouyanfar, Y. Tao, A. Mohan, H. Tian, A. S. Kaseb, K. Gauen, R. Dailey, S. Aghajanzadeh, Y.-H. Lu, S.-C. Chen, and M.-L. Shyu, "Dynamic Sampling in Convolutional Neural Networks for Imbalanced Data Classification," in *2018 IEEE Conference on Multimedia Information Processing and Retrieval (MIPR)*. IEEE, pp. 112–117. [Online]. Available: <https://ieeexplore.ieee.org/document/8396983/>
- [18] P. Hensman and D. Masko, "The Impact of Imbalanced Training Data for Convolutional Neural Networks." [Online]. Available: <https://www.diva-portal.org/smash/get/diva2:811111/FULLTEXT01.pdf>
- [19] M. Buda, A. Maki, and M. A. Mazurowski, "A systematic study of the class imbalance problem in convolutional neural networks," *Neural Networks*, vol. 106, pp. 249–259. [Online]. Available: <http://arxiv.org/abs/1710.05381>
- [20] J. Davis and M. Goadrich, "The relationship between Precision-Recall and ROC curves," in *Proceedings of the 23rd International Conference on Machine Learning - ICML '06*. ACM Press, pp. 233–240. [Online]. Available: <http://portal.acm.org/citation.cfm?doid=1143844.1143874>
- [21] H. Wang, Z. Cui, Y. Chen, M. Avidan, A. B. Abdallah, and A. Kronzer, "Predicting Hospital Readmission via Cost-Sensitive Deep Learning," *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, vol. 15, no. 6, pp. 1968–1978. [Online]. Available: <https://ieeexplore.ieee.org/document/8338085/>
- [22] C. Huang, Y. Li, C. C. Loy, and X. Tang, "Learning Deep Representation for Imbalanced Classification," in *2016 IEEE Conference on Computer Vision*



- and Pattern Recognition (CVPR). IEEE, pp. 5375–5384. [Online]. Available: <https://ieeexplore.ieee.org/document/7780949/>
- [23] S. Albawi, T. A. Mohammed, and S. Al-Zawi, “Understanding of a convolutional neural network,” in *2017 International Conference on Engineering and Technology (ICET)*. IEEE, pp. 1–6. [Online]. Available: <https://ieeexplore.ieee.org/document/8308186/>
- [24] J. Gu, Z. Wang, J. Kuen, L. Ma, A. Shahroudy, B. Shuai, T. Liu, X. Wang, G. Wang, J. Cai, and T. Chen, “Recent advances in convolutional neural networks,” *Pattern Recognition*, vol. 77, pp. 354–377. [Online]. Available: <https://linkinghub.elsevier.com/retrieve/pii/S0031320317304120>
- [25] T.-Y. Lin, P. Goyal, R. Girshick, K. He, and P. Dollar, “Focal Loss for Dense Object Detection,” *CoRR*, vol. abs/1708.02002. [Online]. Available: <http://arxiv.org/abs/1708.02002>
- [26] H. Lee, M. Park, and J. Kim, “Plankton classification on imbalanced large scale database via convolutional neural networks with transfer learning,” in *2016 IEEE International Conference on Image Processing (ICIP)*. IEEE, pp. 3713–3717. [Online]. Available: <http://ieeexplore.ieee.org/document/7533053/>
- [27] N. Thai-Nghe, Z. Gantner, and L. Schmidt-Thieme, “Cost-sensitive learning methods for imbalanced data,” in *The 2010 International Joint Conference on Neural Networks (IJCNN)*. IEEE, pp. 1–8. [Online]. Available: <http://ieeexplore.ieee.org/document/5596486/>
- [28] A. Fernández, S. García, M. Galar, R. C. Prati, B. Krawczyk, and F. Herrera, *Cost-Sensitive Learning*. Springer International Publishing, pp. 63–78. [Online]. Available: http://link.springer.com/10.1007/978-3-319-98074-4_4
- [29] S. H. Khan, M. Hayat, M. Bennamoun, F. A. Sohel, and R. Togneri, “Cost-sensitive learning of deep feature representations from imbalanced data,” *IEEE Transactions on Neural Networks and Learning Systems*, vol. 29, no. 8, pp. 3573–3587.
- [30] P. Phoungphol, Y. Zhang, and Y. Zhao, “Robust multiclass classification for learning from imbalanced biomedical data,” *Tsinghua Science and Technology*, vol. 17, no. 6, pp. 619–628. [Online]. Available: <http://ieeexplore.ieee.org/document/6374363/>
- [31] N. Ghamrawi and A. McCallum, “Collective multi-label classification,” in *Proceedings of the 14th ACM International Conference on Information and Knowledge Management*. ACM, pp. 195–200. [Online]. Available: <https://dl.acm.org/doi/10.1145/1099554.1099591>
- [32] D. Zhang, J. Wang, and X. Zhao, “Estimating the Uncertainty of Average F1 Scores,” in *Proceedings of the 2015 International Conference on The Theory of Information Retrieval*. ACM, pp. 317–320. [Online]. Available: <https://dl.acm.org/doi/10.1145/2808194.2809488>
- [33] X. Chao and Y. Peng, “A cost-sensitive multi-criteria quadratic programming model for imbalanced data,” *Journal of the Operational Research Society*, vol. 69,



no. 4, pp. 500–516. [Online]. Available: <https://www.tandfonline.com/doi/full/10.1057/s41274-017-0233-4>

- [34] S. M. Taheri and G. Hesamian, “A generalization of the Wilcoxon signed-rank test and its applications,” *Statistical Papers*, vol. 54, no. 2, pp. 457–470. [Online]. Available: <http://link.springer.com/10.1007/s00362-012-0443-4>
- [35] A. Paszke, S. Gross, F. Massa, A. Lerer, J. Bradbury, G. Chanan, T. Killeen, Z. Lin, N. Gimelshein, L. Antiga, A. Desmaison, A. Kopf, E. Yang, Z. DeVito, M. Raison, A. Tejani, S. Chilamkurthy, B. Steiner, L. Fang, J. Bai, and S. Chintala, “PyTorch: An imperative style, high-performance deep learning library,” in *Advances in Neural Information Processing Systems 32*. Curran Associates, Inc., pp. 8024–8035. [Online]. Available: <http://papers.neurips.cc/paper/9015-pytorch-an-imperative-style-high-performance-deep-learning-library.pdf>
- [36] F. Pedregosa, G. Varoquaux, A. Gramfort, V. Michel, B. Thirion, O. Grisel, M. Blondel, P. Prettenhofer, R. Weiss, V. Dubourg, J. Vanderplas, A. Passos, D. Cournapeau, M. Brucher, M. Perrot, and E. Duchesnay, “Scikit-learn: Machine learning in Python,” *Journal of Machine Learning Research*, vol. 12, pp. 2825–2830.
- [37] G. Lemaître, F. Nogueira, and C. K. Aridas, “Imbalanced-learn: A python toolbox to tackle the curse of imbalanced datasets in machine learning,” *Journal of Machine Learning Research*, vol. 18, no. 17, pp. 1–5. [Online]. Available: <http://jmlr.org/papers/v18/16-365.html>
- [38] A. Krizhevsky, “Learning Multiple Layers of Features from Tiny Images,” pp. 32–33. [Online]. Available: <https://www.cs.toronto.edu/~kriz/learning-features-2009-TR.pdf>
- [39] “Imbalanced Data.” [Online]. Available: <https://developers.google.com/machine-learning/data-prep/construct/sampling-splitting/imbalanced-data>
- [40] A. Hassan, “AdeelH/pytorch-multi-class-focal-loss: 1.1,” Zenodo. [Online]. Available: <https://doi.org/10.5281/zenodo.5547584>
- [41] A. Galdran, J. Dolz, H. Chakor, H. Lombaert, and I. B. Ayed, “Cost-Sensitive Regularization for Diabetic Retinopathy Grading from Eye Fundus Images.” [Online]. Available: <https://arxiv.org/abs/2010.00291>