SAIL Reading List

Readings by Category

The readings below are grouped here by their relevant category, some readings appear in more than one category.

Convolutional Neural Networks

He et al. [8], Hu et al. [11], Krizhevsky et al. [15], LeCun et al. [16], Sandler et al. [25], Simonyan and Zisserman [26], Szegedy et al. [28], Tan and Le [29, 30], Xie et al. [35], Zerhouni et al. [37]

Transformers

Cordonnier et al. [3], Dosovitskiy et al. [5], Liu et al. [17], Vaswani et al. [32]

Anchor Based Detection and Segmentation Methods

Cai and Vasconcelos [1], Chen et al. [2], Girshick [6], Girshick et al. [7], He et al. [9], Ren et al. [23], Tan et al. [31]

Anchor Free Detection and Segmentation Methods

Redmon and Farhadi [21], Redmon et al. [22]

Neural Architecture Search Methods

Tan and Le [29, 30], Tan et al. [31]

Regularisation and Normalisation

Ioffe and Szegedy [12], Salimans and Kingma [24], Srivastava et al. [27], Wu and He [34]

Optimisation

Kingma and Ba [13]

Activation Functions

Hendrycks and Gimpel [10], Maas et al. [18], Nair and Hinton [19], Ramachandran et al. [20]

Image Augmentations

Cubuk et al. [4], Wightman et al. [33], Yun et al. [36], Zhang et al. [38]

Other

Kolesnikov et al. [14], Wightman et al. [33]

Readings by Year

Before 2012

LeCun et al. [16], Nair and Hinton [19]

2012

Krizhevsky et al. [15]

2013

Maas et al. [18]

2014

Girshick et al. [7], Kingma and Ba [13], Srivastava et al. [27]

2015

Girshick [6], Ioffe and Szegedy [12], Ren et al. [23]

2016

He et al. [8], Hendrycks and Gimpel [10], Redmon et al. [22], Salimans and Kingma [24]

2017

He et al. [9], Vaswani et al. [32], Xie et al. [35], Zerhouni et al. [37], Zhang et al. [38]

2018

Hu et al. [11], Ramachandran et al. [20], Redmon and Farhadi [21], Sandler et al. [25], Wu and He [34]

2019

Cai and Vasconcelos [1], Chen et al. [2], Kolesnikov et al. [14], Tan and Le [29], Yun et al. [36]

2020

Cubuk et al. [4], Dosovitskiy et al. [5?]

2021

Liu et al. [17], Tan and Le [30], Wightman et al. [33]

References

- [1] Zhaowei Cai and Nuno Vasconcelos. Cascade r-cnn: High quality object detection and instance segmentation. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2019.
- [2] Kai Chen, Jiangmiao Pang, Jiaqi Wang, Yu Xiong, Xiaoxiao Li, Shuyang Sun, Wansen Feng, Ziwei Liu, Jianping Shi, Wanli Ouyang, et al. Hybrid task cascade for instance segmentation. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pages 4974–4983, 2019.
- [3] Jean-Baptiste Cordonnier, Andreas Loukas, and Martin Jaggi. On the relationship between self-attention and convolutional layers. arXiv preprint arXiv:1911.03584, 2019.
- [4] Ekin D Cubuk, Barret Zoph, Jonathon Shlens, and Quoc V Le. Randaugment: Practical automated data augmentation with a reduced search space. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops*, pages 702–703, 2020.
- [5] Alexey Dosovitskiy, Lucas Beyer, Alexander Kolesnikov, Dirk Weissenborn, Xiaohua Zhai, Thomas Unterthiner, Mostafa Dehghani, Matthias Minderer, Georg Heigold, Sylvain Gelly, et al. An image is worth 16x16 words: Transformers for image recognition at scale. arXiv preprint arXiv:2010.11929, 2020.
- [6] Ross Girshick. Fast r-cnn. In *Proceedings of the IEEE international conference on computer vision*, pages 1440–1448, 2015.
- [7] Ross Girshick, Jeff Donahue, Trevor Darrell, and Jitendra Malik. Rich feature hierarchies for accurate object detection and semantic segmentation. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 580–587, 2014.
- [8] Kaiming He, Xiangyu Zhang, Shaoqing Ren, and Jian Sun. Deep residual learning for image recognition. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 770–778, 2016.
- [9] Kaiming He, Georgia Gkioxari, Piotr Dollar, and Ross Girshick. Mask r-CNN. In 2017 IEEE International Conference on Computer Vision (ICCV). IEEE, October 2017. doi: 10.1109/iccv.2017.322. URL https://doi.org/10.1109/iccv.2017.322.
- [10] Dan Hendrycks and Kevin Gimpel. Gaussian error linear units (gelus). arXiv preprint arXiv:1606.08415, 2016.
- [11] Jie Hu, Li Shen, and Gang Sun. Squeeze-and-excitation networks. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 7132–7141, 2018.

- [12] Sergey Ioffe and Christian Szegedy. Batch normalization: Accelerating deep network training by reducing internal covariate shift. arXiv preprint arXiv:1502.03167, 2015.
- [13] Diederik P Kingma and Jimmy Ba. Adam: A method for stochastic optimization. arXiv preprint arXiv:1412.6980, 2014.
- [14] Alexander Kolesnikov, Lucas Beyer, Xiaohua Zhai, Joan Puigcerver, Jessica Yung, Sylvain Gelly, and Neil Houlsby. Big transfer (bit): General visual representation learning. arXiv preprint arXiv:1912.11370, 6(2):8, 2019.
- [15] Alex Krizhevsky, Ilya Sutskever, and Geoffrey E Hinton. Imagenet classification with deep convolutional neural networks. *Advances in neural information processing systems*, 25:1097–1105, 2012.
- [16] Yann LeCun, Léon Bottou, Yoshua Bengio, and Patrick Haffner. Gradient-based learning applied to document recognition. Proceedings of the IEEE, 86(11):2278–2324, 1998.
- [17] Ze Liu, Yutong Lin, Yue Cao, Han Hu, Yixuan Wei, Zheng Zhang, Stephen Lin, and Baining Guo. Swin transformer: Hierarchical vision transformer using shifted windows. arXiv preprint arXiv:2103.14030, 2021.
- [18] Andrew L. Maas, Awni Y. Hannun, and Andrew Y. Ng. Rectifier nonlinearities improve neural network acoustic models. In in ICML Workshop on Deep Learning for Audio, Speech and Language Processing, 2013.
- [19] Vinod Nair and Geoffrey E. Hinton. Rectified linear units improve restricted boltzmann machines. In ICML, pages 807-814, 2010. URL https://icml.cc/Conferences/2010/papers/432.pdf.
- [20] Prajit Ramachandran, Barret Zoph, and Quoc Le. Searching for activation functions. 2018. URL https://arxiv.org/pdf/1710.05941.pdf.
- [21] Joseph Redmon and Ali Farhadi. Yolov3: An incremental improvement. arXiv preprint arXiv:1804.02767, 2018.
- [22] Joseph Redmon, Santosh Divvala, Ross Girshick, and Ali Farhadi. You only look once: Unified, real-time object detection. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 779–788, 2016.
- [23] Shaoqing Ren, Kaiming He, Ross Girshick, and Jian Sun. Faster r-cnn: Towards real-time object detection with region proposal networks. *Advances in neural information processing systems*, 28:91–99, 2015.
- [24] Tim Salimans and Diederik P Kingma. Weight normalization: A simple reparameterization to accelerate training of deep neural networks. In *Proceedings of the 30th International Conference* on Neural Information Processing Systems, pages 901–909, 2016.
- [25] Mark Sandler, Andrew Howard, Menglong Zhu, Andrey Zhmoginov, and Liang-Chieh Chen. Mobilenetv2: Inverted residuals and linear bottlenecks. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 4510–4520, 2018.

- [26] Karen Simonyan and Andrew Zisserman. Very deep convolutional networks for large-scale image recognition. arXiv preprint arXiv:1409.1556, 2014.
- [27] Nitish Srivastava, Geoffrey Hinton, Alex Krizhevsky, Ilya Sutskever, and Ruslan Salakhutdinov. Dropout: a simple way to prevent neural networks from overfitting. *The journal of machine learning research*, 15(1):1929–1958, 2014.
- [28] Christian Szegedy, Wei Liu, Yangqing Jia, Pierre Sermanet, Scott Reed, Dragomir Anguelov, Dumitru Erhan, Vincent Vanhoucke, and Andrew Rabinovich. Going deeper with convolutions. In Proceedings of the IEEE conference on computer vision and pattern recognition, pages 1–9, 2015.
- [29] Mingxing Tan and Quoc Le. Efficientnet: Rethinking model scaling for convolutional neural networks. In *International Conference on Machine Learning*, pages 6105–6114. PMLR, 2019.
- [30] Mingxing Tan and Quoc V Le. Efficientnetv2: Smaller models and faster training. arXiv preprint arXiv:2104.00298, 2021.
- [31] Mingxing Tan, Ruoming Pang, and Quoc V Le. Efficientdet: Scalable and efficient object detection. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, pages 10781–10790, 2020.
- [32] Ashish Vaswani, Noam Shazeer, Niki Parmar, Jakob Uszkoreit, Llion Jones, Aidan N Gomez, Lukasz Kaiser, and Illia Polosukhin. Attention is all you need. arXiv preprint arXiv:1706.03762, 2017.
- [33] Ross Wightman, Hugo Touvron, and Hervé Jégou. Resnet strikes back: An improved training procedure in timm. arXiv preprint arXiv:2110.00476, 2021.
- [34] Yuxin Wu and Kaiming He. Group normalization. In *Proceedings of the European conference on computer vision (ECCV)*, pages 3–19, 2018.
- [35] Saining Xie, Ross Girshick, Piotr Dollár, Zhuowen Tu, and Kaiming He. Aggregated residual transformations for deep neural networks. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 1492–1500, 2017.
- [36] Sangdoo Yun, Dongyoon Han, Seong Joon Oh, Sanghyuk Chun, Junsuk Choe, and Youngjoon Yoo. Cutmix: Regularization strategy to train strong classifiers with localizable features. In Proceedings of the IEEE/CVF International Conference on Computer Vision, pages 6023–6032, 2019.
- [37] Erwan Zerhouni, Dávid Lányi, Matheus Viana, and Maria Gabrani. Wide residual networks for mitosis detection. In 2017 IEEE 14th International Symposium on Biomedical Imaging (ISBI 2017), pages 924–928. IEEE, 2017.
- [38] Hongyi Zhang, Moustapha Cisse, Yann N Dauphin, and David Lopez-Paz. mixup: Beyond empirical risk minimization. arXiv preprint arXiv:1710.09412, 2017.