

References

- [1] S. Fu, M. Zhang, C. Mu, and X. Shen, “Advancements of Medical Image Enhancement in Healthcare Applications,” *Journal of Healthcare Engineering*, Mar. 29, 2018. <https://www.hindawi.com/journals/jhe/2018/7035264/> (accessed Jun. 02, 2020).
- [2] Y. Y. Abdallah, “History of Medical Imaging,” *Arch Med Health Sci*, vol. 5, no. 2, p. 275, 2017, doi: 10.4103/amhs.amhs_97_17.
- [3] H. Greenspan, “Super-Resolution in Medical Imaging,” *The Computer Journal*, vol. 52, no. 1, pp. 43–63, Feb. 2008, doi: 10.1093/comjnl/bxm075.
- [4] A. Pinto, “Spectrum of diagnostic errors in radiology,” *WJR*, vol. 2, no. 10, p. 377, 2010, doi: 10.4329/wjr.v2.i10.377.
- [5] R. L. Morin and M. Mahesh, “The Importance of Spatial Resolution to Medical Imaging,” *Journal of the American College of Radiology*, vol. 15, no. 8, p. 1127, Aug. 2018, doi: 10.1016/j.jacr.2018.03.042.
- [6] D. Kouame and M. Ploquin, “Super-resolution in medical imaging: An illustrative approach through ultrasound,” in *2009 IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Boston, MA, USA, Jun. 2009, pp. 249–252, doi: 10.1109/ISBI.2009.5193030.
- [7] J. L. Prince, A. Carass, C. Zhao, B. E. Dewey, S. Roy, and D. L. Pham, “Image synthesis and superresolution in medical imaging,” in *Handbook of Medical Image Computing and Computer Assisted Intervention*, Elsevier, 2020, pp. 1–24.
- [8] R. Hardie, “A Fast Image Super-Resolution Algorithm Using an Adaptive Wiener Filter,” *IEEE Trans. on Image Process.*, vol. 16, no. 12, pp. 2953–2964, Dec. 2007, doi: 10.1109/TIP.2007.909416.
- [9] C. Fookes, F. Lin, V. Chandran, and S. Sridharan, “Evaluation of image resolution and super-resolution on face recognition performance,” *Journal of Visual Communication and Image Representation*, vol. 23, no. 1, pp. 75–93, Jan. 2012, doi: 10.1016/j.jvcir.2011.06.004.
- [10] D. Capel and A. Zisserman, “Super-resolution enhancement of text image sequences,” in *Proceedings 15th International Conference on Pattern Recognition. ICPR-2000*, Barcelona, Spain, 2000, vol. 1, pp. 600–605, doi: 10.1109/ICPR.2000.905409.
- [11] H. Lian, “Variational local structure estimation for image super-resolution,” Accessed: Jun. 04, 2020. [Online]. Available: https://www.researchgate.net/publication/1764515_Variational_local_structure_estimation_for_image_super-resolution.
- [12] R. W. Gerchberg, “Super-resolution through Error Energy Reduction,” *Optica Acta: International Journal of Optics*, vol. 21, no. 9, pp. 709–720, Sep. 1974, doi: 10.1080/713818946.
- [13] S. P. Kim, N. K. Bose, and H. M. Valenzuela, “Recursive reconstruction of high resolution image from noisy undersampled multiframe,” *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol. 38, no. 6, pp. 1013–1027, Jun. 1990, doi: 10.1109/29.56062.
- [14] H. Greenspan, G. Oz, N. Kiryati, and S. Peled, “MRI inter-slice reconstruction using super-resolution,” *Magnetic Resonance Imaging*, p. 10, 2002.

- [15] R. Willett, R. Nowak, I. Jermyn, and J. Zerubia, “Wavelet-Based Superresolution in Astronomy,” p. 10.
- [16] P. D. Santis and F. Gori, “On an Iterative Method for Super-resolution,” *Optica Acta: International Journal of Optics*, vol. 22, no. 8, pp. 691–695, Aug. 1975, doi: 10.1080/713819094.
- [17] Y Tsai and T. Huang, “Multipleframe Image Restoration and Registration,” Greenwich, pp. 317–339.
- [18] N. Nguyen and P. Milanfar, “An efficient wavelet-based algorithm for image superresolution,” in *Proceedings 2000 International Conference on Image Processing (Cat. No.00CH37101)*, Sep. 2000, vol. 2, pp. 351–354 vol.2, doi: 10.1109/ICIP.2000.899387.
- [19] H. Demirel and G. Anbarjafari, “IMAGE Resolution Enhancement by Using Discrete and Stationary Wavelet Decomposition,” *IEEE Trans. on Image Process.*, vol. 20, no. 5, pp. 1458–1460, May 2011, doi: 10.1109/TIP.2010.2087767.
- [20] M. K. Ng, “A Fast MAP Algorithm for High-Resolution Image Reconstruction with Multisensors,” p. 22.
- [21] M. Irani and S. Peleg, “Improving resolution by image registration,” *CVGIP: Graphical Models and Image Processing*, vol. 53, no. 3, pp. 231–239, May 1991, doi: 10.1016/1049-9652(91)90045-L.
- [22] H. Stark and P. Oskoui, “High-resolution image recovery from image-plane arrays, using convex projections,” *J. Opt. Soc. Am. A*, vol. 6, no. 11, p. 1715, Nov. 1989, doi: 10.1364/JOSAA.6.001715.
- [23] S. Baker and T. Kanade, “Super-Resolution Optical Flow.” https://www.researchgate.net/profile/Takeo_Kanade/publication/2449746_Super-Resolution_Optical_Flow/links/57e38d3c08aec0198de8aea.pdf (accessed Jun. 05, 2020).
- [24] M. Irani and S. Peleg, “Super resolution from image sequences,” in *[1990] Proceedings. 10th International Conference on Pattern Recognition*, Atlantic City, NJ, USA, 1990, vol. ii, pp. 115–120, doi: 10.1109/ICPR.1990.119340.
- [25] K. Simonyan, S. Grishin, D. Vatolin, and D. Popov, “Fast video super-resolution via classification,” in *2008 15th IEEE International Conference on Image Processing*, San Diego, CA, USA, 2008, pp. 349–352, doi: 10.1109/ICIP.2008.4711763.
- [26] M. Elad and A. Feuer, “Restoration of a single superresolution image from several blurred, noisy, and undersampled measured images,” *IEEE Trans. on Image Process.*, vol. 6, no. 12, pp. 1646–1658, Dec. 1997, doi: 10.1109/83.650118.
- [27] P. Cheeseman, B. Kanefsky, R. Kraft, J. Stutz, and R. Hanson, “Super-Resolved Surface Reconstruction from Multiple Images,” in *Maximum Entropy and Bayesian Methods*, G. R. Heidbreder, Ed. Dordrecht: Springer Netherlands, 1996, pp. 293–308.
- [28] L. Yue, H. Shen, J. Li, Q. Yuan, H. Zhang, and L. Zhang, “Image super-resolution: The techniques, applications, and future,” *Signal Processing*, vol. 128, pp. 389–408, Nov. 2016, doi: 10.1016/j.sigpro.2016.05.002.
- [29] E. Mjolsness, “Neural networks, pattern recognition, and fingerprint hallucination,” 1986, doi: 10.7907/M0VQ-DJ43.

- [30] S. Baker and T. Kanade, “Hallucinating faces,” in *Proceedings Fourth IEEE International Conference on Automatic Face and Gesture Recognition (Cat. No. PR00580)*, Grenoble, France, 2000, pp. 83–88, doi: 10.1109/AFGR.2000.840616.
- [31] W. T. Freeman, “Learning Low Level Vision,” *International Journal of Computer Vision*, vol. 40, no. 1, pp. 25–47, 2000, doi: 10.1023/A:1026501619075.
- [32] Hong Chang, Dit-Yan Yeung, and Yimin Xiong, “Super-resolution through neighbor embedding,” in *Proceedings of the 2004 IEEE Computer Society Conference on Computer Vision and Pattern Recognition, 2004. CVPR 2004.*, Washington, DC, USA, 2004, vol. 1, pp. 275–282, doi: 10.1109/CVPR.2004.1315043.
- [33] Jianchao Yang, J. Wright, T. S. Huang, and Yi Ma, “Image Super-Resolution Via Sparse Representation,” *IEEE Trans. on Image Process.*, vol. 19, no. 11, pp. 2861–2873, Nov. 2010, doi: 10.1109/TIP.2010.2050625.
- [34] C. Ledig *et al.*, “Photo-Realistic Single Image Super-Resolution Using a Generative Adversarial Network,” in *2017 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Honolulu, HI, Jul. 2017, pp. 105–114, doi: 10.1109/CVPR.2017.19.
- [35] C.-H. Pham *et al.*, “Multiscale brain MRI super-resolution using deep 3D convolutional networks,” *Computerized Medical Imaging and Graphics*, vol. 77, p. 101647, Oct. 2019, doi: 10.1016/j.compmedimag.2019.101647.
- [36] C. Dong, C. C. Loy, K. He, and X. Tang, “Image Super-Resolution Using Deep Convolutional Networks,” *arXiv:1501.00092 [cs]*, Jul. 2015, Accessed: Feb. 20, 2020. [Online]. Available: <http://arxiv.org/abs/1501.00092>.
- [37] C. Dong, C. C. Loy, and X. Tang, “Accelerating the Super-Resolution Convolutional Neural Network,” *arXiv:1608.00367 [cs]*, Aug. 2016, Accessed: May 24, 2020. [Online]. Available: <http://arxiv.org/abs/1608.00367>.
- [38] J.-T. Hsu, C.-H. Kuo, and D.-W. Chen, “Image Super-Resolution Using Capsule Neural Networks,” *IEEE Access*, vol. 8, pp. 9751–9759, 2020, doi: 10.1109/ACCESS.2020.2964292.
- [39] A. Krizhevsky, I. Sutskever, and G. E. Hinton, “ImageNet Classification with Deep Convolutional Neural Networks,” in *Advances in Neural Information Processing Systems 25*, F. Pereira, C. J. C. Burges, L. Bottou, and K. Q. Weinberger, Eds. Curran Associates, Inc., 2012, pp. 1097–1105.
- [40] S. Sabour, N. Frosst, and G. E. Hinton, “Dynamic Routing Between Capsules,” *arXiv:1710.09829 [cs]*, Nov. 2017, Accessed: Feb. 24, 2020. [Online]. Available: <http://arxiv.org/abs/1710.09829>.
- [41] G. E. Hinton, S. Sabour, and N. Frosst, “Matrix capsules with EM routing,” presented at the International Conference on Learning Representations, Feb. 2018, Accessed: Oct. 16, 2020. [Online]. Available: <https://openreview.net/forum?id=HJWLfGWRb>.
- [42] Y.-H. H. Tsai, N. Srivastava, H. Goh, and R. Salakhutdinov, “CAPSULES WITH INVERTED DOT-PRODUCT ATTENTION ROUTING,” p. 15, 2020.
- [43] J. Choi, H. Seo, S. Im, and M. Kang, “Attention Routing Between Capsules,” in *2019 IEEE/CVF International Conference on Computer Vision Workshop*

- (ICCVW), Seoul, Korea (South), Oct. 2019, pp. 1981–1989, doi: 10.1109/ICCVW.2019.00247.
- [44] “Deconvolution,” *Wikipedia*. Sep. 21, 2020, Accessed: Oct. 30, 2020. [Online]. Available: <https://en.wikipedia.org/w/index.php?title=Deconvolution&oldid=979490499>.
- [45] Z. Wang, A. C. Bovik, H. R. Sheikh, and E. P. Simoncelli, “Image Quality Assessment: From Error Visibility to Structural Similarity,” *IEEE Trans. on Image Process.*, vol. 13, no. 4, pp. 600–612, Apr. 2004, doi: 10.1109/TIP.2003.819861.
- [46] Z. Wang, E. P. Simoncelli, and A. C. Bovik, “Multiscale structural similarity for image quality assessment,” in *The Thirly-Seventh Asilomar Conference on Signals, Systems & Computers, 2003*, Pacific Grove, CA, USA, 2003, pp. 1398–1402, doi: 10.1109/ACSSC.2003.1292216.
- [47] Zhou Wang and A. C. Bovik, “A universal image quality index,” *IEEE Signal Process. Lett.*, vol. 9, no. 3, pp. 81–84, Mar. 2002, doi: 10.1109/97.995823.
- [48] “yjn870/FSRCNN-pytorch: PyTorch implementation of Accelerating the Super-Resolution Convolutional Neural Network (ECCV 2016).” <https://github.com/yjn870/FSRCNN-pytorch> (accessed Sep. 06, 2020).
- [49] “motokimura/capsnet_pytorch: PyTorch implementation of Geoffrey Hinton’s Dynamic Routing Between Capsules.” https://github.com/motokimura/capsnet_pytorch (accessed Sep. 06, 2020).
- [50] Y. Meng, *YuxianMeng/Matrix-Capsules-pytorch*. 2020.
- [51] Y.-H. H. Tsai, *yaohungt/Capsules-Inverted-Attention-Routing*. 2020.
- [52] “sewar · PyPI.” <https://pypi.org/project/sewar/> (accessed Oct. 26, 2020).