

Alzheimer Immunotherapy Research & Development, LLC; Johnson & Johnson Pharmaceutical Research & Development LLC; Lumosity; Lundbeck; Merck & Co., Inc.; Meso Scale Diagnostics, LLC; NeuroRx Research; Neurotrack Technologies; Novartis Pharmaceuticals Corporation; Pfizer Inc.; Piramal Imaging; Servier; Takeda Pharmaceutical Company; and Transition Therapeutics. The Canadian Institutes of Health Research provides funding to support ADNI clinical sites in Canada. Private sector contributions are facilitated by the Foundation for the National Institutes of Health (www.fnih.org). The Northern California Institute for Research and Education is the grantee organization, and the study was coordinated by the Alzheimer's Therapeutic Research Institute at the University of Southern California. ADNI data are disseminated by the Laboratory for Neuroimaging at the University of Southern California.

REFERENCES

- [1] J. L. Tanabe, D. Amend, N. Schuff, V. DiSclafani, F. Ezekiel, D. Norman, G. Fein, and M. W. Weiner, "Tissue segmentation of the brain in Alzheimer disease", *American Journal of Neuroradiology*, 1997; 18(1):115-123.
- [2] A. Krizhevsky, I. Sutskever, and G. E. Hinton, "ImageNet classification with deep convolutional neural networks", *Proc. NIPS*, 2012; 1097-1105.
- [3] C. Szegedy, W. Liu, Y. Jia, P. Sermanet, S. Reed, D. Anguelov, D. Erhan, V. Vanhoucke, and A. Rabinovich, "Going deeper with convolutions", *Proc. IEEE Comput. Soc. Conf. Comput. Vis. Pattern Recognit.*, 2015; 1-9.
- [4] K. He, X. Zhang, S. Ren, and J. Sun, "Deep Residual Learning for Image Recognition" *arXiv:1512.03385*, 2015
- [5] Girshick, Ross, "Fast r-cnn," In Proceedings of the IEEE international conference on computer vision, pp. 1440-1448. 2015.
- [6] National Research Centre for Dementia, Korea <http://www.nrcd.re.kr/>
- [7] J. Ashburner, "A fast diffeomorphic image registration algorithm", *NeuroImage*, Volume 38, Issue 1, 2007, Pages 95-113, ISSN1053-8119, <https://doi.org/10.1016/j.neuroimage.2007.07.007>
- [8] Mazziotta J, Toga A, Evans A, et al, "A probabilistic atlas and reference system for the human brain". *International Consortium for Brain Mapping (ICBM), Philosophical Transactions of the Royal Society of London Series B*. 2001; 356(1412):1293-1322. doi:10.1098/rstb.2001.0915.
- [9] Çiçek, Ö., Abdulkadir, A., Lienkamp, S.S., Brox, T. and Ronneberger, O., 2016, October. "3D U-Net: learning dense volumetric segmentation from sparse annotation". In *International conference on medical image computing and computer-assisted intervention* (pp. 424-432). Springer, Cham.
- [10] Alzheimer's Disease Neuroimaging Initiative: ADNI www.loni.ucla.edu/ADNI.
- [11] Y. Zhang, S. Wang, G. Ji, and Z. Dong "Exponential wavelet iterative shrinkage thresholding algorithm with random shift for compressed sensing magnetic resonance imaging," *IEEE Transactions on Electrical and Electronic Engineering*. 2015; 10(1):116-117.
- [12] Z. Dong, Y. Zhang, F. Liu, Y. Duan, A. Kangarlu, B. S. Peterson, "Improving the spectral resolution and spectral fitting of 1H MRSI data from human calf muscle by the spread technique," *NMR in Biomedicine*. 2014; 27(11):1325-1332
- [13] J. Ashburner, "A fast diffeomorphic image registration algorithm", *NeuroImage*, Volume 38, Issue 1, 2007, Pages 95-113, ISSN1053-8119, <https://doi.org/10.1016/j.neuroimage.2007.07.007>
- [14] Khagi, B. and Kwon, G.R., 2020. 3D CNN design for the classification of Alzheimer's disease using brain MRI and PET. *IEEE Access*.
- [15] Nagi, J., Ducatelle, F., Di Caro, G.A., Cireşan, D., Meier, U., Giusti, A., Nagi, F., Schmidhuber, J. and Gambardella, L.M., 2011, November. "Max-pooling convolutional neural networks for vision-based hand gesture recognition". In *2011 IEEE International Conference on Signal and Image Processing Applications (ICSIPA)* (pp. 342-347). IEEE.
- [16] Nair, V. and Hinton, G.E., 2010, January. "Rectified linear units improve restricted Boltzmann machines". In *ICML*. Bishop, C.M., 2006. *Pattern recognition and machine learning*. Springer.
- [17] Payan, Adrien, and Giovanni Montana. "Predicting Alzheimer's disease: a neuroimaging study with 3D convolutional neural networks." *arXiv preprint arXiv:1502.02506* (2015).
- [18] Hosseini-Asl, Ehsan, Georgy Gimel'farb, and Ayman El-Baz. "Alzheimer's disease diagnostics by a deeply supervised adaptable 3D convolutional network." *arXiv preprint arXiv:1607.00556* (2016).
- [19] Oh, Kanghan, Young-Chul Chung, Ko Woon Kim, Woo-Sung Kim, and Il-Seok Oh. "Classification and Visualization of Alzheimer's Disease using Volumetric Convolutional Neural Network and Transfer Learning." *Scientific Reports* 9, no. 1 (2019): 1-16.
- [20] Liu, M., Cheng, D., Wang, K., & Wang, Y. (2018). Multi-Modality Cascaded Convolutional Neural Networks for Alzheimer's Disease Diagnosis. *Neuroinformatics*, 16(3-4), 295-308. doi:10.1007/s12021-018-9370-4.
- [21] Yang G, Zhang Y, Yang J, et al. Automated classification of brain images using wavelet-energy and biogeography-based optimization. *Multimed Tools Appl*. 2015;75(23):15601-15617.
- [22] Jha, Debesh, Ji-In Kim, and Goo-Rak Kwon. "Diagnosis of Alzheimer's disease using dual-tree complex wavelet transform, PCA, and feed-forward neural network." *Journal of healthcare engineering* 2017 (2017).
- [23] Khagi, Bijen, Goo - Rak Kwon, and Ramesh Lama. "Comparative analysis of Alzheimer's disease classification by CDR level using CNN, feature selection, and machine - learning techniques." *International Journal of Imaging Systems and Technology* 29, no. 3 (2019): 297-310.
- [24] Wang SH, Zhang Y, Li YJ, Jia WJ, Liu FY, Yang MM. Single slice based detection for Alzheimer's disease via wavelet entropy and multilayer perceptron trained by biogeography-based optimization. *Multimed Tools Appl*. 2016;77:1-25
- [25] Maas, Andrew L., Awni Y. Hannun, and Andrew Y. Ng. "Rectifier nonlinearities improve neural network acoustic models." In *Proc. icml*, vol. 30, no. 1, p. 3. 2013.